TEACHERS OF INDEPENDENT STUDY STUDENTS IN SECONDARY SCHOOLS: RESPONSIBILITIES AND PREPARATION

By

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CHAPTER I

THE MENTAL QUICKENING

This study is a direct outgrowth and extension of United States Office of Education Cooperative Research Project 2969, "Independent Study in Secondary Schools," which was conducted at the University of Florida.

The Problem

Much has been written, more has been spoken, eulogizing self-motivated learning and the habits, behaviors, and skills of continued learning. There has been discussion about the development of independent study skills--how they are best developed, which students can develop them, and what the teachers' responsibilities and instructional roles are. For the purposes of this study teachers' responsibilities and instructional roles are the paramount concern.

Twentieth century educational practices have included many types of somewhat independent studies (correspondence study, programmed instruction, individual projects, etc.). In recent years, there has been major emphasis in secondary education on even greater individualization of students' learning activities. Independent study, learning activity that is largely initiated and directed by the student, has been one of these efforts to attain a higher degree of individualization in instruction. "Learning how to learn independently" has become increasingly important in today's changing society. A rather comprehensive

definition of independent study was included in the conclusions of the "Independent Study in Secondary Schools" project report.

> Independent study is considered by us to be learning activity largely motivated by the learner's own aims to learn and largely rewarded in terms of its intrinsic values. Such activity as carried on under the auspices of secondary schools is somewhat independent of the class or other group organization dominant in past and present secondary school instructional practices, and it utilizes the services of teachers and other professional personnel primarily as resources for the learner.[1]

Teachers in some of America's secondary schools are each day responsible for youth identified as independent study students. These "more or less independent" students are engaged in a variety of types of learning experiences with varying amounts of direct teacher supervision. For the most part they are similarly engaged in the resolution of problems apart from constant teacher direction. However, as Alexander and Michael stated, "along with a time and an adequate place, there also needs to be a teacher available to help the more or less independent student find resources, plan and replan goals, and evaluate his progress."[2]

Personal interviews were held with over two hundred teachers in the "Independent Study in Secondary Schools" project.[3] The interviews

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[1]William M. Alexander and Vynce A. Hines, Independent Study in Secondary Schools (Gainesville: University of Florida Printing Department, 1966), p. 67.

[2]William M. Alexander and Lloyd S. Michael, "Current Curriculum Developments: Problems and Prospect," New Curriculum Developments, ed. Glenys Unruh (Washington: Association for Supervision and Curriculum Development, 1965), p. 100.

[3]USOE Cooperative Research Project 2969, directed by William M. Alexander and Vynce A. Hines at the University of Florida, surveyed practices and characteristics of independent study in the continental United States.

failed to indicate that college preparatory programs for pre-service secondary school teachers had been of significant value to these teachers, in terms of their assignment to give direction and guidance to students involved in independent studies. The interviews did consistently elicit statements of specific responsibilities expected of or assigned teachers of independent study students. Twenty-four responses to open-ended items on the opinionnaire administered to teachers and administrators in USOE Project 2969 (ISISS) indicated that inadequate or improper preparation of teachers was a source of difficulty.[4]

An extensive survey of independent study at the secondary level has been accomplished in USOE Cooperative Research Project 2969, "Independent Study in Secondary Schools." The project was intended to provide a systematic definition, description, and analysis of independent study practices in selected secondary schools. Answers were sought in a sample of 24 secondary schools east and 12 secondary schools west of the Mississippi River, to these questions:

1. What are the characteristics of independent study plans as carried on in selected secondary schools?

2. What evidence is available in these schools as to the effectiveness of these plans?

3. What opinions are held by teachers and administrators in the selected schools as to the values, limitations, and problems of independent study in secondary schools?

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[4]Alexander and Hines, op. cit., p. 61.

4. What hypotheses regarding independent study in secondary schools are indicated by the project as significant for further research?[5]

The present study was a direct outgrowth of an additional question that arose during the project investigations--"How can preservice and in-service preparation be provided for teachers of independent study or for those who might become independent study coordinators?[6]

The positive responses favoring expansion of the independent study programs by the teachers and administrators involved in the nationwide survey of independent study[7] further encouraged this investigator to look more closely at selected aspects of the independent study approach to learning. Analysis of open-ended items included in the USOE Project 2969 opinionnaire regarding expansion or curtailment of independent study practices revealed that of 249 teachers and administrators 84 percent favored expansion--98 percent of the administrators favored expansion; 82 percent of the teachers favored expansion.

Recently completed researches included findings significant to this study--students are quite positive in their attitudes toward independent study;[8] independent study practices are geographically widespread and diversified;[9] and teacher responsibilities are not all

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[5] Ibid., pp. 4, 5.

[6] Ibid., p. 114.

[7] Ibid., p. 53.

[8] James D. Wells, "Independent Study Students in Secondary Schools, and Their Expectations and Satisfactions in Independent Study" (Doctoral dissertation, University of Florida, 1966), p. 193.

[9] Alexander and Hines, op. cit., p. 10.

the same as those assigned or expected of regular classroom teachers.[10] The fact that students enjoy independent study and report benefits not garnered in regular classrooms, the fact that some schools now have formally organized and identified independent study programs, and the fact that teachers without special preparation are assigned students doing independent study led to the rationale underlying this study.

Colleges engaged in teacher preparation, school districts and systems that provide pre- and in-service experiences, and individual teachers must make decisions concerning relevant preparatory experiences without the benefit of needed data. Characteristic responsibilities of independent study teachers have not been systematically identified nor analyzed. There has not been comprehensive empirically based study to determine the pre-service experiences needed by teachers of independent study students. Experienced teachers of independent study students and administrators of independent study programs have not been adequately nor systematically surveyed to identify pre-service experiences they believe to be vital to the teachers of secondary school independent study students.

Because of the nature of current descriptions, this study proposed to systematically collect, synthesize, and analyze data from teachers and administrators experienced with independent study techniques, practices, and programs. It was hoped that this study would make possible systematic research-oriented approaches to the development of pre- and in-service programs for teachers of independent study students in secondary schools. Further, the results, conclusions, and

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[10] Ibid., pp. 62-66.

implications were to be applied, if proven useful, in the development of a proposed model preparatory pattern.

Purpose of the Study

The purpose of this study was to describe the teachers of independent study students; what their responsibilities and preparation should be. As employed in this study, independent study students are those who by the USOE Project 2969 definition are involved in

> . . . learning activity largely motivated by the learner's own aims to learn and largely rewarded in terms of its intrinsic values. Such activity as carried on under the auspices of secondary schools is somewhat independent of the class or other group organization dominant in past or present secondary school instructional practices, and it utilizes the services of teachers and other professional personnel primarily as resources for the learner.[11]

Data were gathered and analyzed in an attempt to:

1. Identify teacher and administrator opinions, relating to characteristic responsibilities of teachers of independent study students in secondary schools and to needed pre-service experiences for these teachers,

2. Identify agreement as to the degree of importance of selected responsibilities and preparatory experiences,

3. Provide needed data on which to base a model for a pre-service preparatory program to be used in colleges having teacher education programs preparing teachers for secondary school positions.

Questions for Study

The study sought answers to the following questions:

1. What do practitioners think should be the responsibilities

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[11] Ibid., p. 67.

in curriculum planning, selection and assignment of students, and instructional activities for secondary teachers working with independent study students?

2. What do practitioners think should be the components of the pre-service preparatory program for secondary teachers working with independent study students?

3. Do teachers and administrators show significant differences of opinion on listed responsibilities?

4. Do teachers and administrators show significant differences of opinion on listed preparatory experiences?

5. Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the types of programs in which they teach?

6. Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the department in which they teach?

7. Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the number of years of teaching experience?

8. Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the number of years of teaching experience in independent study programs?

9. What model preparatory program would be feasible based on these findings?

Limitations of the Study

The scope of this study is limited by the following:

1. The study was limited to 24 secondary schools east and 12 secondary schools west of the Mississippi River within the continental United States.

2. Schools selected for the study were limited to those used in the USOE Project 2969 nationwide survey of independent study. Thus, schools were selected from a sample containing secondary schools formally identified as having independent study plans. Nominations were obtained from state school officers' recommendations, literature, and other educators' references. (Sample selection procedures for schools are discussed on pages 27 and 28)

3. Because individuals returned opinionnaires at varying lengths of time the study is limited by uncontrolled, unique conditions that affected the individuals.

4. The investigation of teachers' expressed opinions was limited to responses obtained from an opinionnaire developed for use in the study.

5. Participation was limited to those subjects who voluntarily responded and returned the opinionnaire.

Definition of Terms

Independent Study.--

. . . learning activity largely motivated by the learner's own aims to learn and largely rewarded in terms of its

> intrinsic values. Such activity as carried on under the auspices of secondary schools is somewhat independent of the class or other group of organization dominant in past or present secondary school instructional practices, and it utilizes the services of teachers and other professional personnel primarily as resources for the learner.[12]

Independent Study Teacher. -- any staff member who is assigned instructional responsibilities for students in independent study. Guidance personnel are considered administration for analysis purposes.

Pre-service Experiences. -- the planned experiences included in college teacher preparation programs, previous work experiences, and other applicable activities.

Opinionnaire. -- instrument with 83 items to be rated from "of no value" to "mandatory." The items were validated and tested for reliability. The items are classified by teacher responsibility in the areas of curriculum planning, selection and assignment of students, and instructional activities, and by needed preparatory experiences. (See Appendix A.)

Methods and Procedures Used

Following is a brief discussion of the methods and procedures used in the study:

1. The first phase of the study involved identification of the problem and ways to effect a solution. The selection of schools had already been effected by USOE Project 2969. Selection of subjects was accomplished from USOE Project 2969 data files. The schools

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[12] Ibid., p. 67.

involved had identified independent study plans. The teachers and administrators had been identified by USOE Project 2969 research assistants as associated with the independent study program. Cooperation was secured by letter.

2. The second phase involved the development of a reliable, yet valid, instrument to determine opinions of the subjects. Exploratory studies were conducted.

3. The third phase consisted of data collection. Follow-ups were conducted for late responders.

4. The analysis of the data consisted of factor analysis, analysis of variance, and securing population characteristics. The statistical technique of analysis of variance was utilized to determine significant differences between groups.

5. The final phase involved data interpretation with resulting findings and recommendations.

Significance of the Study

The studies available which described independent study teacher responsibilities or included propositions concerning preparatory programs for teachers of independent study students in secondary schools based these descriptions and propositions on limited empirical data. The present interest in and possibilities of dissemination of independent study programs for secondary schools, combined with the lack of definitive descriptions and research in the areas of teacher responsibilities and needed pre-service experiences, established the need for systematic description and analyses of these areas. It was hoped that a definitive, broadly based and widely-sampled description of responsibilities of and needed pre-service experiences for teachers of

independent study students in secondary schools would provide information useful to the development of preparatory programs, both pre- and in-service. There were sufficient numbers of independent study programs in operation in secondary schools in the United States to make such a study both practicable and feasible. Logically and historically, teacher education programs have been based on the belief that teachers with specific professional responsibilities needed special types of pre-service college experiences. Should the need for special pre-service preparatory schooling become evident during the course of this study it was postulated that a model could be developed with decisions based on empirical data as well as the author's own theory and its bases.

Plan of the Study

In Chapter I an overview of the study has been presented. Chapter II provides a review of related studies. Chapter III describes the collection and treatment of the data. Chapter IV presents detailed discussion of data analyses and findings. Chapter V is a description of responsibilities of independent study teachers. Chapter VI includes discussion on experiences or schooling needed by the independent study teacher. In Chapter VII a preparatory program model is presented. Chapter VIII summarizes the findings; implications for further research are stated.

CHAPTER II

WHAT OTHERS SAY ABOUT THE INDEPENDENT STUDY TEACHER

Review of Related Literature

Recent years have encompassed growing enthusiasm for the development of the independent learner. Increasingly the development of independent learners as an aim of secondary education has been the topic of educational convocations and publications.

Perusal of the literature on independent study programs yielded some reports of responsibilities and roles of teachers of independent study students in college settings and in secondary schools. Some suggestions for teacher education were available.

Teacher Responsibilities Reported at the College Level

Baskin emphasized that what was new in recent college experiences with independent study was its use as a part of the teacher's regular classroom procedures and its employment with all students within a particular course. Demands on the instructor's time included planning and organizing new teaching conditions, and preparing syllabi, study guides, and special reading lists. Baskin concluded by stating "We do not know enough about how to teach by these newer methods, nor how we can best train students for working on their own."[1] This was not

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[1]Samuel Baskin, Quest for Quality, Some Models and Means (Washington: United States Department of Health, Education and Welfare, Office of Education, 1960), p. 8.

minimizing teacher responsibility, as he continued "the teacher who employs these independent study procedures has a critical role to play in selecting and structuring learning experiences so that the maximum effect is achieved and the student's own resources for learning are used to the fullest."[2] Baskin suspected that the teacher's absence from the student or his presence had little correlation with the student's independence of the teacher.[3]

Chickering described the instructor's responsibilities at Goddard College.[4] The instructor helped students to plan, execute, and evaluate the independent study. The process included approving of applications, serving as a consultant, adding comments to the students' evaluations, and holding a final conference for evaluating the semester of independent study work.

Service on evaluating committees was mentioned in Felder's study as a responsibility.[5]

Analyses by Baskin[6] of student satisfaction scales and conferences with students indicated that students come to college largely unprepared for independent learning.

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[2] Ibid., p. 9.

[3] Samuel Baskin, Morris Keeton, and J. W. Cohen, "Use of Independent Study Programs," Journal of Higher Education, 33 (February, 1962), 104.

[4] Arthur W. Chickering, "Dimensions of Independence: Goddard College's Experiment in College Curriculum Organization," Journal of Higher Education, 35 (January, 1964), 38-41.

[5] Bernice D. Felder, "Characteristics of Independent Study Practices in Colleges and Universities of the United States," Doctoral dissertation, The University of Texas, Abstract: Dissertation Abstracts, 24:2807-2808; No. 7, 1964.

[6] Samuel Baskin, "Experiment in Independent Study (1956-1960)," Journal of Experimental Education, 31 (December, 1962), 183-185.

Baskin further stated that if independent study methods are to succeed, students need a great deal of help in learning how to work on their own. At Antioch College it was concluded that the instructor must carefully select and structure the student's learning experiences. The usual inference that the instructor's job may be different was stated: "The real promise of the independent studies is in the shift they may bring with them in the educational orientation of both students and teachers."[7]

Bonthius'[8] comprehensive examination of independent study at the college level cited the types of supervision reported by instructors: individual conferences, interim written work, and deadlines for final drafts of papers. The supervisory functions included: approval of applications or approval of special cases; approval of the program of independent study changes; final examination and certification of participants; and publicizing the program.

A careful examination by Baskin[9] of several experimental independent studies including those at Oberlin College, Antioch College, and Vanderbilt University was followed by nine suggested areas of study for the pre-service teacher. Study and field work were suggested in the following areas: social psychology and anthropology, languages and

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[7]Ibid., p. 185.

[8]Robert H. Bonthius, James Davis, J. Garber Drushall, Frances V. Guille, and Warren P. Spencer, The Independent Study Program in the United States (New York: Columbia University Press, 1957), 50-61, 213.

[9]Baskin (1960), op. cit., p. 10.

culture, the physical sciences and mathematics, the biological sciences, the arts, education and the community, American society, and the English language.

Teacher Responsibilities Reported at the Secondary Level

The role of the teacher in independent study plans now being used in secondary schools also lacks fine delineation. Staff utilization studies suggested by the National Association of Secondary School Principals in 1957 included the need for "analysis of teacher roles and teacher competencies." The need was stated as follows:

> Define changing roles of teachers in relation to students in such teaching functions as motivating, explaining, pointing to materials, demonstrating, planning methods of learning, organizing groups, listening, viewing, using mechanical and electronic aids, developing attitudes, appreciations, skills, and understandings, helping individuals and groups achieve social and psychological adjustment, reading papers, evaluating, recording and reporting pupil progress, working with parents and other lay persons, working with professional colleagues, and dissemination and adding to educational science.[10]

Writing about secondary school independent study programs, Kelly stated that "probably the second greatest obstacle to effective independent study is that teachers are not prepared to best utilize that approach."[11]

Responsibilities of secondary teachers were the topic of discussion in several articles. Edgar Dale[12] mentioned limited counsel and guidance by the teacher for independent study participants. The

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[10]J. Lloyd Trump, and Dorsey Baynham, Focus on Change--Guide to Better Schools (Chicago: Rand McNally, 1961), p. 143.

[11]Eugene T. Kelly, "Unsupervised Study--Proceed With Caution," Clearing House, 40 (October, 1965), 100.

[12]Edgar Dale, "The Teacher and Technology," The News Letter, 29 (October, 1963), 2-3.

teacher "must teach in the sense of arranging superior conditions for learning. She becomes an organizer and manager of learning experiences . . . ." The teacher is to have more time "to see that all parts of the student's education fit together . . . , more time for discussion and creative interaction."[13] Jackson[14] reminded that the teacher on the secondary level cannot possibly be expert or even well-informed in all areas of subject matter. However, he contended that the techniques of independent study and the content itself should be available. Changnon[15] listed the following teacher responsibilities: preventing loitering and talking; preparing syllabi and tapes; preparing bibliographies; helping students learn to study on their own without constant supervision; and developing student responsibility for materials, machines, and facilities. Brown[16] stated that the teachers must be creative, and must give effective counseling on freedom for development.

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[13] Ibid., p. 2.

[14] David M. Jackson, "A Search for Practical Means of Improving Instruction by Increasing Students' Responsibility for Their Own Learning at the University of Illinois High School," National Association of Secondary School Principals Bulletin, 43 (January, 1959), 233-239.

[15] David M. Jackson, Pauline E. Changnon, Roger K. Brown, Paul Westmeyer, and W. L. Shoemaker, "Five Projects Designed to Increase Students' Independence in Learning, University of Illinois High School," National Association of Secondary School Principals Bulletin, 44 (January, 1960), 290-304.

[16] B. Frank Brown, "Independent Study in the Nongraded School," (Chapter 5). The Nongraded High School (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963). pp. 132-133.

Sandberg[17] mentioned structuring the course and selecting materials as teacher responsibilities. Jackson, et al.,[18] included developing needed materials as a teacher responsibility. Docking and Hogan[19] enumerated serving as advisor, giving information about where to find sources, soliciting progress reports, and arranging for needed materials.

In a National Association of Secondary-School Principals sponsored survey of "Curricular Innovations" Sand and Miller[20] listed several teacher responsibilities. In schools discussed, the teacher in the role of consultant helped students limit the scope of their learning activities and organize proposed studies. Important skills to be taught or developed included techniques of research, the use of a library, the use of the interview, organization and critical analysis of materials, applications of theory, and reserving judgments until after investigations are made. The teacher as resource person remained in the background and gave up a supervisory role.

In Baltimore, Maryland, teachers acted as advisors to students, selected the students to be admitted to independent study, met with independent study students in a group situation once a week, screened students' proposed study plans and saw that they were pursued, helped make

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[17]John H. Sandberg, "Independent Study for Bright Students," Education, 85 (November, 1964), 158-161.

[18]Jackson (1960), op. cit.

[19]Robert Docking and Dan Hogan, "Breaking Grade Barriers," Michigan Educational Journal, 42 (January, 1965), 16-17.

[20]Ole Sand and Richard I. Miller, "Curricular Innovations," National Association of Secondary School Principals Bulletin, 47 (May, 1963), 120-144.

decisions on changes of topic, and participated in evaluation of the independent study program and in making recommendations.[21]

Carr[22] listed teacher responsibilities of approving submitted plans, holding group discussions of problems, hearing progress reports, and acting as a resource person. Kelly[23] saw the teacher's role as that of guiding and directing the learning process.

Trump's[24] discussion of teacher responsibilities in Focus on Change was organized around his statement, "Schools that experiment with independent study find it difficult to stimulate even the most able students to do truly creative independent work."[25] Therefore, teachers should be able to suggest special projects, present materials in an open-ended manner, suggest and guide rather than assign, "spotlight" development of students independent study skills, recognize individual differences in ability to think and solve problems, become increasingly expert in getting students to use independent study facilities to the best degree, coordinate learning experiences for independent study students, and participate in discussions among teachers and counselors.

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[21]Edward L. Goldsmith, "Independent Study in the Junior High School," Baltimore Bulletin of Education, 41 (No. 3-4, 1963-64), 1-6.

[22]Jacquelyn B. Carr, "Project Freedom," The English Journal 53 (March, 1964), 202-204.

[23]Kelly, op. cit.

[24]Trump, op. cit.

[25]Ibid., p. 27.

Whitmire[26] suggested two divisions of responsibilities in independent study that were of interest: those of teacher and those of coordinator. The teacher served as a consultant, a specialist in the area of study; gave guidance and had discussions with independent study students which assisted in exploration and confirmation of ideas; held weekly conferences with individual independent study students; evaluated student work and gave marks; approved independent study plans of individual students; participated in oral examination of independent study students on their research; and sought assistance from others when needed. Since the teachers in most independent study programs did not have a coordinator, these responsibilities often had to be accomplished by the teachers themselves. The coordinator controlled admissions, kept all records, maintained liaison with teacher and student, offered help in obtaining resource materials, aided in research writing, suggested means for improving study habits, encouraged and motivated when necessary, observed students' study habits, and conferred with them on progress. He kept files of written work, anecdotal remarks on progress and attitude, and evaluation sheets. He was responsible to the administration for the operation of the program. Whitmire pointed out that problems resulted from lack of communication between students and teacher consultants, and not giving enough guidance (expecting too much student self-reliance).

Independent Study, edited by Beggs and Buffie,[27] abounded with references to techniques of teaching needed to implement an independent

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[26]Janet Whitmire, "The Independent Study Program at Melbourne High," Phi Delta Kappan, 47 (September, 1965), 43-46.

[27]David W. Beggs, III, "In-service Programs for Independent Study," Independent Study, eds. David W. Beggs, III and Edward G. Buffie (Bloomington: Indiana University Press, 1965), p. 197-217.

study program. Beggs wrote, "planned consideration needs to be given to the cannons of teaching that apply to independent study."[28] Roles assigned to the teacher of independent study students included: being a data source; being a source of motivation; being a counselor or advisor; freeing the student to pursue his work; being able to listen and understand; using provocation questions in interaction with students; bringing other teachers into the development of some studies; utilizing student empathy for certain teachers; evaluating independent study projects in terms of goals; and being involved from the beginning in planning--in procedural matters and in the substance of the program.

Speakers and participants at a conference sponsored by Field Enterprises Educational Corporation emphasized that "learning how to learn independently" required deliberate teaching of the necessary techniques. Challenging learning activities, guided experiences in problem identification, and practice in the independent gathering, evaluating, and organizing of information to be applied to problem resolution were seen as mandatory.[29]

Alexander, speaking on "Developing Independence in Learning," submitted three categories of ways in which teachers can foster these skills: assigning tasks for learners to do independently; involving learners through group planning; and guiding the individuals' study. The essential ingredients of the independent study approach were listed as: a question, problem, or task important to the learner; guidance,

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[28] Ibid., p. 198.

[29] "Using Reference Materials Effectively in School," (Chicago: Field Enterprises Educational Corporation, 1966), p. 1-16.

when needed, of a resource person; and the needed time, materials, and other facilities to carry on the learning task.[30]

The skills of reference use were seen as in need of deliberate teaching. Constant and planned guidance in their use was suggested. The teacher must be skilled in a way of teaching that encourages independent exploration of a variety of sources of information. The teaching-learning style conducive to the development of skills of independent learning should involve students in planning of learning experiences, develop projects that require gathering of a variety of information, develop study activities that require inquiry into a topic, encourage students to seek out good reasons for their conclusions, teach students skills of note-taking and organization of information, provide opportunity for team learning projects, encourage students to seek background information for better understanding of current topics, provide enrichment materials, regularly provide time for pupils to browse and discover the variety in materials, and "teach specific skills of problem formulation and analysis" and "outline-development."[31]

There have been propositions of needed preparatory experiences for pre- and in-service teachers. Shaplin and Olds' Team Teaching included a section by Heathers[32] in which he suggested that the preparatory program should provide course work in group processes or group dynamics, including role playing. Teachers should learn to build a

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[30] Ibid., p. 3.

[31] Ibid., pp. 1-16.

[32] Glen Heathers, "Team Teaching and the Educational Reform Movement," Team Teaching, eds. Judson T. Shaplin and Henry F. Olds, Jr. (New York: Harper and Row, Publishers, Inc., 1964), p. 365.

program of studies for the individual in one or more curricular areas. This requires knowing how "to integrate information about the learner's aptitudes, achievements, interests, and personal-social characteristics." The "know how" is "derived from tests, observations of the learner's behavior and reports from his teachers and other school personnel."[33] Course work and internship experiences in fundamentals of instruction will follow the students' liberal arts foundation and sound academic preparation in curricular areas he plans to teach.

Comprehensive planning for a proposed preparatory program suitable for pre-service teachers of independent study students in secondary schools was included in Trump's[34] guidelines in Focus on Change. The limited research available to Trump was obvious from his date of publication. Major principles implied were:

1. Recruiting, screening, and educating of teachers-to-be should be the "shared purpose" of secondary schools, colleges, and universities;

2. Screening or selecting of trainees should be more clearly understood;

3. Closer cooperation should be developed between instructors in professional and in nonprofessional courses;

4. Arts and sciences instructors should aid prospective teachers to understand content so they can teach it.

5. In professional courses instructors should tie the techniques of teaching to the subject matter to be taught;

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[33] Ibid., p. 365.

[34] Trump, op. cit., pp. 49-52, 123.

6. Both kinds of college teachers should use methods they expect school teachers to use--they should plan and teach courses in teacher education as teams;

7. Undergraduate teacher-trainees should be involved in secondary schools from their freshman years--at first observations and routine, by the fifth year spending 15 hours per week mainly as teachers;

8. School teachers and college instructors in all fields should plan trainees' programs and evaluate results;

9. There should be a sharing of ideas with colleagues;

10. There should be use of audio and video recording devices to hear and see self-teaching, see student reactions, and make evaluations;

11. The teacher program should relate to the functions of teaching;

12. There should be mutual planning and supervising of the work experience of the trainees by secondary schools and colleges.

The data files of USOE Project 2969 revealed that teachers had been polled in a limited fashion concerning pre-service experiences had and needed. The broad purpose of the "Independent Study in Secondary Schools"[35] project was to systematize information about the independent study practices by producing a description and analysis of these practices in the selected schools. Specific objectives included: determining the characteristic nature of teacher supervision of

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[35]William M. Alexander and Vynce A. Hines, Independent Study in Secondary Schools (Gainesville: University of Florida Printing Department, 1966), p. 3.

independent study; collecting evaluative data as available in the selected schools on reaction of pupils, teachers and administrators to independent study plans; and determining the opinions of administrators in the selected schools and of the teachers supervising independent study regarding what skills teachers need to supervise independent study effectively. The data were compiled and analyzed to include descriptions of teachers' roles in independent study. Among the conclusions were the following: independent study is being used in practically all curriculum areas; those people with experience in independent study favor it and feel it should be expanded; and problems do exist, especially in terms of space, teacher and student schedules, materials, financial support, attitudes of nonparticipating teachers, and teacher preparation for directing independent study. Included in the implications for further research was the idea that attention should be given to the development of programs of pre-service and in-service preparation for teachers of independent study or for those who might become independent study coordinators.[36]

Summary

It is evident that some responsibilities of teachers of independent study students at the college level have been identified, inferred or tentatively stated. The use of independent study at the college level has probably influenced the acceptance of the concept of independent study and also the practices utilized in the secondary schools. Independent study at the college and university level has

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[36] Ibid., pp. 112-114.

undergone considerable analysis and evaluation. At the secondary level this has not been the case. There are reports at the secondary level which describe some teacher responsibilities, and at times suggest needed pre-service experiences for teachers of students doing independent study.

Instructional responsibilities for independent study teachers are suggested. Many of the reports are descriptions of independent study practices or experimental results from particular independent study programs in individual schools. Information concerning the nature and extent of secondary school independent study practices and teacher roles has been extended significantly with the completion of a nationwide investigation of independent study[37] reported in June, 1966.

Thus, the interest in and possibilities of the independent study idea for secondary schools combined with the lack of definitive descriptions and research in this area seem to point to the need for a systematic investigation and analysis of teacher responsibilities and preparation.

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[37] Ibid.

CHAPTER III

STRATEGIES FOR STUDY OF THE INDEPENDENT STUDY TEACHER

General Design

The procedures employed in this study were designed to collect data in a sample of schools known to have independent study plans in operation. Opinions of teachers and administrators relating to the characteristic responsibilities and preparation of teachers assigned instructional responsibility for students involved in independent study were sampled. These data were systematically organized and analyzed in relation to the objectives of the study. Collection of data was by an opinionnaire. Selection of secondary schools, teachers and administrators had been performed by the USOE Project 2969 research team. A description of the procedures is included later in this chapter. The following steps were taken: (1) instrumentation; (2) collection of data; (3) analysis of the data; (4) development, by reference to these data and to the author's own theory and its bases, of a model; and (5) preparation of a report of the study.

Selection of Schools

The secondary schools to be used in this study were located within the continental United States, in the North, South, East, and West. A list of secondary schools using independent study plans in these regions was compiled. A total of 317 secondary schools in 48 states were identified as having independent study plans in operation.

State departments of education were polled for initial lists. They supplied information on whether the schools were urban or suburban, what grades they included, their enrollments, and whether they were public or private. Additional nominations were secured from articles in educational literature and from competent authorities from some of the states with few schools listed by the state department.

A table of random numbers was used to select the sample of 36 schools (and alternates) from the final list of 317 schools. The final sample included 24 schools in states east and 12 schools in states west of the Mississippi River. The list of these cooperating schools, by name of school and location, is given in Appendix B.

The cooperating schools were visited by the trained USOE 2969 observers who investigated independent study programs in operation. They verified the existence of a program of independent study, described its nature in case studies, and kept lists of personnel involved.

The continued cooperation of these selected secondary schools was solicited for this study. Each school received a letter requesting its assistance in this data collection effort and with one exception all chose to participate. The letter is included in Appendix E.

Selection of Teachers and Administrators

USOE Project 2969 teacher interview guides were used in compiling the list of teachers to be polled. The interview guides listed only those teachers the visiting researchers interviewed as teachers of independent study students. The administrators to be polled were identified from the principal-interview guides for each participating school. There were approximately 312 teachers and administrators

listed and it was decided to poll the entire group. In this manner many types of programs were represented in the final data compilation.

Instrumentation

A special opinionnaire, "Teachers of Independent Study Students: Responsibilities and Preparation" (see Appendix A), was constructed. To develop the most comprehensive listing of responsibilities of and pre-service experiences for teachers of independent study students, a number of approaches and sources for obtaining information were employed.

1. The members of the research staff for USOE Project 2969 were asked to list the responsibilities of teachers of independent study students, based on their personal interviews and observations.

2. The answers to relevant questions included in the interview guides of USOE Cooperative Research Project 2969 were analyzed to determine additional items.

3. A content analysis of Wells's student opinionnaire was conducted in an effort to discover pertinent items.[1]

4. Literature related to independent study programs and teacher preparation was perused for additional opinionnaire items.

Judgments of competent professionals were employed to establish face validity of the opinionnaire. Three members of the faculty of the University of Florida and three graduate students, all well informed in independent study, were enlisted in the inspection. They were given

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[1]James D. Wells, "Independent Study Students in Secondary Schools, and Their Expectations and Satisfactions in Independent Study" (Doctoral dissertation, University of Florida, 1966), pp. 201-204.

the purpose of the study and the questions it hoped to answer. They then read the items to ascertain whether answers to the questions would be elicited. In the unanimous opinion of the six judges the final 83 items should elicit answers to the posed questions.

Exploratory studies with selected teachers were followed by a test for reliability. A sample of teachers of independent study students at Cocoa Beach Junior-Senior High School, Cocoa Beach, Florida and selected persons in the College of Education at the University of Florida were utilized to test for the reliability of the opinionnaire. The teacher population was selected on the basis of having taught in independent study the school year of 1965-66. Graduate students were selected on the basis of familiarity with independent study, having been personnally involved in some way. A total of 20 individuals were utilized.

The test-retest method was utilized in the reliability study. The initial test was given on May 16, 1966; the retest was administered on May 23, 1966. Two sets of totals were used for each section of the instrument and for the instrument as a whole. Using the Pearson r for these totals, the reliability was found to be .90 for Section A Part I, .82 for Section B, Part I, .85 for Section C, Part I, and .86 for Section D or Part II. Using the Pearson r for the test as a whole the reliability was found to be .93.

The items in Part I, "Responsibilities of Teachers of Independent Study Students," were designed to determine the responsibilities of teachers of independent study students in secondary schools. These responsibilities were categorized under "Curriculum Planning for

Independent Study Programs," "Selection and Assignment of Independent Study Students," and "Instructional Activities of Teachers of Independent Study Students." Part II of the opinionnaire, "Preparatory Experiences for the Teachers of Independent Study Students," was designed to determine needed preparatory experiences for teachers of independent study students in secondary schools. In both parts of the opinionnaire items were designed to elicit beliefs held by experienced teachers of independent study students in the 36 secondary schools. Respondents provided a measure of the strength of their beliefs, in relation to each item, by selecting one of four on a value scale. (See the instructions on page 1 of the opinionnaire, Appendix A.)

Collection of Data

Opinionnaires were mailed to the principal of each participating school. His assistance in distributing, collecting, and returning the data was sought through an accompanying letter. Opinionnaires were administered to all teachers and administrators identified from the interview guides of USOE Project 2969. These teachers and administrators were asked to complete an opinionnaire, giving their beliefs as to the responsibilities of teachers of secondary independent study students and concerning needed pre-service experiences for teachers of secondary independent study students. Follow-up techniques included personal correspondence, telephone calls, and telegrams.

The data were collected between May 20, 1966 and August 19, 1966. The time taken to return the instruments varied from three days to the full three months. The opinionnaire contained 83 items with the possibility of additions by the respondent in each of the four sections. Seven items of information were solicited from respondents on page 1 of

the opinionnaire. (See page 1 of the opinionnaire in Appendix A.) A total of 312 instruments were mailed with 263 usable instruments returned. There was a total return of 266 instruments or 85 percent. Four schools were not represented in administration and two schools were not represented in teachers (one in the eastern group, one in the western group). A chart illustrating the number of opinionnaires per school, sent and received, is available in Appendix B.

Treatment of the Data

Opinionnaires were classified and grouped on the basis of informative data reported by raters on the opinionnaire's front page. These groups included the following: total group of raters; total group of teachers; independent study rater type groups;[2] and subject area groups as broad fields. Years of teaching experience in independent study programs and total number of years teaching experience were utilized in making comparisons.

Population characteristics were obtained on each item for the total sample and for each of the subgroups. (Frequency distributions, arithmetic means, standard deviations.) The mean ratings were used as estimates of the degree to which teachers and administrators felt individual items to be important.

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[2]Wells, on. cit., pp. 178-179.

Wells identified ten types of independent study programs based on organizational arrangements. Teachers were requested to classify themselves as teaching in one of Wells's ten types of independent study program. Descriptions of the types were included on page 8 of the teacher opinionnaire, "Teachers of Independent Study Students: Responsibilities and Preparation." (See Appendix A, p. 227.)

Analyses were made to determine the degree to which teachers and administrators believed the responsibilities listed in Part I of the opinionnaire, "Responsibilities of Teachers of Independent Study Students," were essential to the directing of independent study students in secondary schools. A simple analysis of variance was run on each item between the following groups: teachers and administrators; subject areas as broad field, and independent study rater types. This identified the degree to which these groups agreed the responsibilities to be essential. In addition the analysis of variance made it possible to test for significant differences among the groups.

The technique of factor analysis was employed as an additional statistical aid. Fruchter comments on the uses of factor analysis in his Introduction to Factor Analysis:

> In the continuing effort of science to establish theoretical systems which will account for observed phenomena, identification and measurement of basic variables are of paramount importance. Almost every field of science has set up a number of classificatory categories which can be described and measured. Factor analysis starts with a set of observations obtained from a given sample by means of such a priori measures. It is a method of analyzing this set of observations from their inter-correlations to determine whether the variations represented can be accounted for adequately by a number of basic categories smaller than that with which the investigation was started. Thus data obtained with a larger number of a priori measures may be explained in terms of a smaller number of reference variables.
>
> Factor analysis provides a mathematical model which can be used to describe certain areas of nature. A series of test scores or other measures are inter-correlated to determine the number of dimensions the test space occupies, and to identify these dimensions in terms of traits or other general concepts. The interpretations are done by observing which tests fall on a given dimension and inferring what these tests have in common that is absent from tests not falling on the dimension. Tests correlate to the extent that they measure common traits. By observing and analyzing the pattern of inter-correlations, the operation of one or more underlying traits or other sources of common variance is inferred.

It is thus by establishing the basic sources of variance in a field of investigation and determining the nature of each measure in terms of basic categories that we can know what types of variations the tests (or other variables) are measuring, the interrelationships of these measures, and what needs to be done to modify or improve them when they are not entirely satisfactory for our purposes.

It has been pointed out by Royce that a proper order for research programs might be, first, to use a set of a priori measures in a field of investigation and factor analyze them to determine the basic traits or other sources of variance operating; second, to study these factors, one at a time, by the techniques of analysis of variance to determine how they are affected by different experimental conditions or how they vary among groups that differ with respect to age, sex, education, or other pertinent background variables; and lastly, to study them experimentally in the laboratory for specific groups under carefully controlled conditions. While this order need not be invariable it does help to point up the proper function of each type of approach. In factor analysis the "individual differences" represented by a larger number of measures, that are given to a single population, usually at one time under a standard set of conditions, are studied to detect possible common sources of variation or variance. In analysis of variance a single measure is administered over a series of occasions and conditions to determine the significance of group differences. The individual differences by this latter approach are often used as an estimate of "error variance" against which to evaluate the group differences.

The interpretations of the results of factor analysis, as is true of all scientific interpretations, are tentative. Factors are not eternal verities; they merely serve to represent the fundamental underlying sources of variation operating in a given set of scores or other data observed under a specified set of conditions.[3]

Factor loading scores were transformed into factor loading indices[4] and a simple analysis of variance was run on these indices

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[3]Benjamin Fruchter, Introduction to Factor Analysis (New York: D. Van Nostrand Company, Inc., 1954), pp. 1-4.

[4]Factor Loading Indices (FLI) were computed as follows:

$$FLI = \frac{\sum_{i=1}^{I} y_i^2 \, z_{xi}}{\sum y_i^2}$$

where y_i is the factor loading for item i and z_{xi} is the standard score for item i.

between teachers and administrators. Again, the significant differences were identified. These significant differences were compared with the item analysis of variance results.

These same procedures were used in analyses of items in Part II of the opinionnaire, "Preparatory Experiences for the Teachers of Independent Study Students," to identify those items believed essential to the preparation for teaching independent study students in secondary schools.

CHAPTER IV

ANALYZING THE COLLECTED OPINIONS

Introduction

The purpose of this study was to obtain the collective judgments of administrators and teachers with experience in directing or administering independent study on (1) the characteristic responsibilities of teachers of independent study students in secondary schools and (2) the pre-service experiences needed by teachers of independent study.

The teacher opinionnaire "Teachers of Independent Study Students: Responsibilities and Preparation," included two divisions: Part I, "Responsibilities of Teachers of Independent Study Students" and Part II, "Preparatory Experiences for the Teachers of Independent Study Students." Part I of the opinionnaire "Responsibilities of Teachers of Independent Study Students" contained three sections: Section A, "Curriculum Planning for Independent Study Programs"; Section B, "Selection and Assignment of Independent Study Students"; and Section C, "Instructional Activities of Teachers of Independent Study Students." Part II was one inclusive section or division. The sections are utilized in this chapter as items and analysis of items are discussed.

In synthesizing and analyzing these data the population characteristics were secured, the data were factor analyzed, and simple analysis of variance was tested both item-by-item and on the factor loading indices.

Items in the teacher opinionnaire were rated by respondents on a four-point scale. Instructions and the scale were included in the instrument (see Appendix A). Respondents marked 0, 1, 2, or 3 to indicate the degree of importance of an item. Value terms were assigned to each of these numbers or positions of belief so that 0 referred to "of no value," 1 referred to "of some value," 2 referred to "needed," and 3 referred to "mandatory." For the purposes of analysis and interpretation point ranges were arbitrarily chosen from the midpoint between two positions to the next midpoint. The point ranges and their value terms, thus were: .00 to .50, "of no value"; .51 to 1.50, "of some value"; 1.51 to 2.50, "needed"; and 2.51 to 3.00 "mandatory." Discussion of these ranges in this chapter has included terms such as "higher" and "lower" areas or "ranges" to refer to areas within .50 above or below the values of 1 and 2.

Population Characteristics

The subject population totaled 263 members. There were 34 administrators, 2 of whom were guidance personnel, and 229 teachers. Teachers east of the Mississippi River returned 149 usable opinionnaires; their administrators, 23. Teachers west of the Mississippi River returned 80 usable opinionnaires; their administrators, 11. The number of responses corresponded closely with the 2 to 1 ratio of eastern schools to western schools in the schools' sample.

Teacher Groups

The teacher sample was subdivided into subject matter subcategories, into broad-field subject subcategories, and into independent study rater

types, based on Wells's "Ten Types of Independent Study Programs in Secondary Schools"[1] (See Appendix A). The subject areas utilized were agriculture, art, business education, English, foreign languages, home economics, industrial arts, mathematics, music, physical education, science, social studies, and vocational studies. The majority of teachers taught English (56), mathematics (30), science (39), or social studies (48). A more complete tabulation is included in Table 1. These 13 subject areas were combined into the six broad fields of fine arts, foreign languages, language arts, mathematics and science, social studies, and vocational education. The largest numbers of teachers were in language arts (57), mathematics and science (70), and social studies (48). (Table 1 provides a complete tabulation.) Teachers were grouped into the following ten independent study rater types: in addition to; in lieu of; seminars; individually planned; large groups, small groups, independent study; extra-curricular; work experience; develop student responsibility; normally required; and regular class where all do independent study. These rater types were based on Wells's types of independent study programs, identified in relation to the time-organizational factor.[2] Thus, the teachers were divided into functional categories. Descriptions of the types of programs were included on page 8 of the teacher opinionnaire and are included in Appendix A. Teachers classified themselves as directing more studies through: in addition to (26); individually planned (28); large group,

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[1] James D. Wells, "Independent Study Students in Secondary Schools, and Their Expectations and Satisfactions in Independent Study" (Doctoral dissertation, University of Florida, 1966), pp. 178-179.

[2] Ibid.

small group, independent study (33); develop student responsibility (39); and normally required (29). A complete listing is included in Table 2.

Characteristics of the total population, the administrator group, and the teacher group are included in Appendix C. Means, frequencies, standard deviations, and group membership totals are listed.

Ranges of Mean Ratings for Teachers

Table 4 lists the opinionnaire items by ranges of mean ratings as judged by the teachers. The five items in Section A, "Curriculum Planning for Independent Study Programs," rated as "mandatory" were:

1. Developing purposes and objectives of an independent study program

2. Selecting content of an independent study program in terms of attitudes, interest and abilities

7. Surveying materials, equipment and spaces for independent study as to availability and usefulness

12. Planning facilities, materials and services needed for independent study

14. Selecting facilities, materials and services needed for independent study

None of the items in Section B, "Selection and Assignment of Independent Study Students," were rated as "mandatory." The two items rated as "mandatory" in Section C, "Instructional Activities of Teachers of Independent Study Students," were:

9. Offering special teacher help to independent study students when needed

19. Providing conference time for independent study students when needed

TABLE 1

TEACHERS OF INDEPENDENT STUDY CLASSIFIED
BY SUBJECT AREA AND BY BROAD FIELDS

Subject Area	Number of Teachers	Broad Fields	Number of Teachers
Art	9		
Music	5	Fine Arts	14
Foreign Languages	13	Foreign Language	13
English (Journalism, Speech, etc.)	56	*Language Arts	57
Mathematics	30		
Physical Education	1		
Science	39	Mathematics and Science	70
Social Studies	48	Social Studies	48
Agriculture	3		
Business Education (includes Business English)	3		
Home Economics	4		
Industrial Arts	7		
Vocational	11	Vocational Education	27

*Includes course in Business English

TABLE 2

TEACHERS OF INDEPENDENT STUDY STUDENTS AS THEY CLASSIFIED THEMSELVES BY WELLS'STEN TYPES OF INDEPENDENT STUDY PROGRAMS

Rater Types	Number of Teachers
1. in addition to	26
2. in lieu of	15
3. seminars	10
4. individually planned	28
5. large groups, small groups, independent study	33
6. extra-curricular	10
7. work experience	14
8. develop student responsibility	39
9. normally required	29
10. regular class--all do independent study	20
11. unclassified	5
TOTAL	229

TABLE 3

TEACHERS OF INDEPENDENT STUDY STUDENTS CLASSIFIED
BY YEARS OF TEACHING EXPERIENCE

Years Classroom Teaching	Number of Teachers	Years Directing Independent Study	Number of Teachers
1-5	57	1	57
		2	68
		3	35
		4,5	28
6-10	65	6,7,8	23
11-20	65	9-30	14
21-46	37		
Unclassified	5	Unclassified	4
TOTAL	229		229

TABLE 4

SUMMARY OF TEACHER RATINGS OF OPINIONNAIRE ITEMS

Sections	Mandatory Items (Means of 2.51--3.00)	Needed Items (Means of 1.51--2.50)	Of Some Value Items (Means of .51--1.50)
Part I*			
A--"Curriculum Planning for Independent Study Programs"	1,2,7,12,14	3,4,5,6,8,9, 10,11,13,15,16, 17	18,19
B--"Selection and Assignment of Independent Study Students"	---	2,3,4,5,7,8 9,10,11	1,6
C--"Instructional Activities of Teachers of Independent Study Students"	9,19	1.2,3,4,5,7, 8.10,11,12,13, 14,15,16,17,18, 20,21,22,23,24, 25	6
Part II*			
D--"Preparatory Experiences for the Teachers of Independent Study Students"	---	2,3,4,5,6,10,11, 14,19,20,21,23, 24	1,7,8,9,12, 13,15,16,17, 18,22,25,26, 27,28

*Part I--"Responsibilities of Teachers of Independent Study Students"
*Part II--"Preparatory Experiences for the Teachers of Independent Study Students"

Teachers did not rate any items as "mandatory" in Part II or Section D, "Preparatory Experiences for the Teachers of Independent Study Students."

Twelve items in Section A were rated by teachers in the "needed" range, as follows:

3. Preparing a course of study, course outline, or syllabus of an independent study program

4. Developing criteria or scales to evaluate student progress in independent study

5. Interpreting the program of independent study to other faculty members

6. Helping other teachers learn the responsibilities of teaching independent study students

8. Surveying community resources to determine usable and available ones for an independent study program

9. Informing parents of all students about an independent study program

10. Informing citizens in general about an independent study program

11. Interpreting the independent study program to parents of independent study students

13. Estimating costs of facilities, materials and services needed for independent study

15. Assisting students in selecting courses in which they would be doing independent study work

16. Planning and participating in evaluating the independent study program (opinion polls, etc.)

17. Planning independent learning activities in terms of students' attitudes, interests, and abilities

Nine items were judged to be "needed" in Section B, as follows:

2. Analyzing and interpreting results of tests given to independent study students

3. Using teacher recommendations in selecting and admitting students to an independent study program

4. Establishing prerequisites for admission to independent study

5. Checking student cumulative folders prior to admission decisions

7. Evaluating proposed plans or contracts of independent study students (statement of the problem to be studied and procedures to be used)

8. Making final decisions concerning admission to independent study programs

9. Nominating students for an independent study program

10. Making decisions as to the duration of the student's independent study

11. Counseling students as to the advisability of participation in an independent study program

Twenty-two of the 25 items in Section C were judged by teachers to be "needed." These items were:

1. Teaching learning procedures appropriate to proposed independent study projects

2. Teaching library skills to independent study students

3. Teaching students to budget their time for independent study

4. Teaching independent study students to use interview techniques

5. Teaching independent study students to write plans or proposals for independent study projects

7. Teaching independent study students to discriminate among goals and activities

8. Teaching independent study students to discriminate among materials and approaches

10. Teaching independent study students to recognize and respect the differing contributions of individuals

11. Allowing students to do things in their own way (providing for trial-and-error experiences)

12. Encouraging independent study students to try new ways of doing things

13. Arranging for students of similar interests and abilities to work together

14. Guiding discussions of small groups of independent study students

15. Developing student responsibility for self-evaluation by requiring periodic written student progress reports

16. Evaluating student progress through products of independent study work

17. Using oral examination of independent study students for purposes of evaluation

18. Assigning independent study student grades based on evaluation of process and product

20. Using student-teacher conferences as progress checks

21. Promoting initiative and self-direction by minimizing direct supervision

22. Arranging facilities and equipment in the classroom for independent study

23. Planning for independent study experiences during the school day outside the school facilities

24. Keeping records other than those ordinarily kept by a classroom teacher

25. Providing vocational information in the independent study student's area of study

Thirteen items in Part II or Section D were judged to be "needed." These items were:

2. Experimentation with independent study in own classroom

3. Additional work in the subject matter involved

4. Visitation to a similar experimental program in the school system

5. Visitation to a similar experimental program in the school

6. Visitation to a similar experimental program in another school system

10. Specific study and training in counseling independent study students

11. Group conferences with other teachers of independent study students

14. Research experiences via independent, individual study

19. Methods course emphasizing independent study as an instructional approach

20. Participation in a school's development of an independent study program

21. Participation in special institutes encouraging independent study on the part of members of the institute (such as NSF and NDEA summer or year-long institutes)

23. Participation in and/or direction of seminars emphasizing independent projects

24. Study and/or experience in working with small groups (e.g., groups of 12 or less)

Teachers rated two items in Section A "of some value." The items were:

18. Preparing written descriptions of the independent study program for distribution to the public

19. Operating as a consultant on independent study to other schools

The 2 items in Section B which teachers judged "of some value" were:

1. Administering diagnostic tests to prospective independent study students

6. Developing and distributing application forms for independent study programs

In Section C only item 6 was judged "of some value." This item was:

6. Assisting independent study students in the preparation of papers for publication

Fifteen items of the 28 in Part II or Section D, were rated by teachers as "of some value." The items were as follows:

1. Participation in a similar independent study program as a student

7. Teaching experience in a school which used flexible scheduling

8. Teaching experience in a school which was non-graded

9. Teaching experience in a school which used team teaching

12. Using of experimental materials in national curriculum projects (SMSG, BSCS, etc.)

13. Research experiences as a graduate student

15. Work in a tutorial, one-to-one, student-teacher relationship

16. Special preparation for the teaching of reading

17. Internship in a teaching situation using independent study instruction

18. Course work or practicum in teaching exceptional children

22. Formal instruction in library-research skills

25. Experience in preparing reports of independent study

26. Experience in evaluating reports of independent study prepared by other educators

27. Writing theses required in graduate work

28. Participation in research studies requiring the use of statistics

None of the responsibilities or suggested pre-service experiences included as items in the teacher opinionnaire were judged "of no value" by the teachers in the sample population. Frequencies, means, and standard deviations are included in Appendix C.

Teaching Experience

Teaching experience was classified both by the total number of years of experience and by the number of years in directing independent study. In terms of the total years of experience the categories

contained about equal numbers of teachers. Fifty-seven teachers had taught from 1 to 5 years, 65 teachers had 6 to 10 years' experience, 65 teachers had from 11 to 20 years, and 37 teachers had 21 or more years' teaching experience (Table 3). Independent study experience was confined largely to 1, 2, or 3 years (See Table 3). Fifty-seven teachers had directed independent studies for 1 year, 68 teachers had 2 years' experience in independent study, and 35 teachers had 3 years' independent study experience. Another way to view this phenomena was that 70 percent of the teachers included in the sample had from 1 to 3 years' experience in independent study while only 25 percent of the teachers sampled were in the 1 to 5 years' experience category for all teaching.

Factor Analysis

In an effort to determine the discreteness of opinionnaire items the data were subject to factor analysis. Basically, the steps consisted of computing factor loading scores, converting selected factor loading scores into factor loading indices, and running simple analysis of variance between groups on these indices.[3] The underlying

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[3]Benjamin Fruchter, Introduction to Factor Analysis (New York: D. Van Nostrand Company, Inc., 1954), p. 151.

Fruchter states that any factor loading of .30 to .50 is of at least moderate significance, thus the upper limit of .50 was chosen as the lower limit for this study.

These data analyses were performed on the IBM 709 Electronic Data Processing System at the University of Florida Computing Center. The computer program used for the factor analyses (RPAFAV), BST010, was provided by the Data Processing Center, Texas Engineering Experiment Station, College Station, Texas. This program was adapted by Dr. Wilson H. Guertin, Associate Professor of Education and Psychology at the University of Florida, and by Mr. John Flynn, graduate student in Foundations at the University of Florida. The computer program used for simple analysis of variance was a standard program provided by Mrs. Jennie Grossman, a programmer at the University of Florida Computing Center, Gainesville, Florida.

factors which account for the common variance of the 19 items in Section A, 11 items in Section B, 25 items in Section C, and 28 items in Part II were extracted by the computation of Pearson correlation coefficients, the factor analysis of the resulting inter-correlation matrices (Appendix D) and the rotation of factor loadings. Factor loading scores of .50 and larger were transformed into factor loading indices.[4] Analysis of variance was tested between the total teacher sample (229) and the administrators (34) utilizing the factor loading indices in an effort to demonstrate agreement between the dimensions or factors and the results of item-by-item analysis of variance.

Indices and Analysis of Variance

The total opinionnaire, "Teachers of Independent Study Students: Responsibilities and Preparation," was subjected to factor analysis. The 83 by 83 matrix yielded no clumping, possibly indicating that the sections had been constructed so as to stand discrete.

There were three sections in Part I of the opinionnaire, "Responsibilities of Teachers of Independent Study Students," and one section in Part II, "Preparatory Experiences for the Teachers of Independent Study Students." These sections were subjected to factor analysis. Several factors were extracted. Factor analysis results were clean-cut with no intermingling highs when .50 was used as the selection criterion for factor loadings. Tables 5, 6, 7, and 8 list the five factors

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[4] Factor Loading Indices (FLI) were computed as follows:

$$FLI = \frac{\sum_{i=1}^{I} y_i^2 z_{xi}}{\sum y_i^2}$$

where y_i is the factor loading for item i and z_{xi} is the standard score for item i.

in Section A, three factors in Section B, six factors in Section C, and seven factors in Part II identified as a result of the factor analysis and the items having loadings of .50 or more on the factor. Each of the factors presented in Tables 5, 6, 7, and 8 is discussed in the following paragraphs in terms of identified dimensions. Analysis of variance results for teacher (229) and administrator (34) groups are reported in Table 9 and incorporated in the discussion of individual factors. An F ratio of 3.89 was significant at the .05 level; and F of 6.76 was significant at the .01 level when teachers (229) and administrators (34) were compared.

Section A of Part I, "Curriculum Planning for Independent-Study Programs," contained five factors. These dimensions of teacher responsibilities in curriculum planning for independent study programs are discussed in ensuing paragraphs. Factors are presented in order of decreasing level of significance.

Factor 2 included items 5, 6, 9, 10, and 11 (Table 5). Responsibilities such as interpreting or informing others concerning an independent study program were included in each item. The emphasis reflected seemed to justify the identification of this factor as "communicating the program." Factor loading indices were prepared for these items and simple analysis of variance results indicated that teachers and administrators disagreed

significantly at the .01 level (Table 10). Administrators rated the factor with greater enthusiasm. Items 5, 6, 9, 10, and 11 in factor 2 were reated 2.38, 2.24, 2.18, 1.79, and 2.62 by administrators; 1.94, 1.85, 2.01, 1.62, and 2.31 by teachers. All items were given mean ratings in the "needed" range or above emphasizing agreement on the factor as a dimension of responsibility in curriculum planning. The disagreement on factor 2, statistically speaking, appeared less important in view of all "needed" mean ratings.

Factor 5 included items 16 and 19 (Table 5). The items involved responsibilities related to evaluation of an independent study program and operating as a consultant concerning independent study. This factor was identified as "acting as a consultant." Factor loading indices were prepared for these items and simple analysis of variance results indicated that teachers and administrators disagreed significantly at the .05 level (Table 11). Administrators rated the factor with greater strength. Items 16 and 19 in factor 5 were rated 2.24 and 1.50 by administrators; 1.87 and 1.35 by teachers. Both groups gave mean ratings on item 16 within the "needed" range and rated item 19 in the upper "of some value" range. Administrator ratings were higher; teacher hesitancy was possibly due to inexperience in such an activity as "acting as a consultant."

The items in factor 1 which had factor loadings of .50 or above (3 and 4) were clearly related to objectives, content, and evaluative actions (Table 5) and are, thus, identified as the dimension "course outline and evaluation." Factor loading indices were prepared for these items. Simple analysis of variance revealed no significant difference for teachers and administrators. Therefore, inspection of the means for items 3 and 4 (2.07 and 2.38) from the total sample revealed both were given strong "needed" ratings.

Factor 3 included items 7, 12, 13, and 14 (Table 5). These items dealt with the responsibilities related to planning for materials, equipment, facilities,and services to be used in an independent study program. The dimension was labeled "materials and facilities." Simple analysis of variance revealed no significant difference for teachers and administrators. Inspection of total sample means for items 7, 12, 13, and 14 showed 2.56, 2.68, 2.18, and 2.51 respectively. All items in this factor were considered to be "mandatory" except item 13. This item dealt specifically with estimating costs of materials and facilities and was rated as "needed" by the total group.

The items in factor 4 which had factor loadings of .50 or above (2 and 17) dealt with content and activities of an independent study program. Thus, the dimension was identified as "content and activities."

TABLE 5

THE FIVE FACTORS IN SECTION A: CURRICULUM PLANNING FOR INDEPENDENT STUDY STUDENTS

Factor	Item No.	Item	Factor Loading
1	3	Preparing a course of study, course outline, or syllabus of an independent study program	.55
	4	Developing criteria or scales to evaluate student progress in independent study	.58
2	5	Interpreting the program of independent study to other faculty members	.59
	6	Helping other teachers learn the responsibilities of teaching independent study students	.56
	9	Informing parents of all students about an independent study program	.70
	10	Informing citizens in general about an independent study program	.68
	11	Interpreting the independent study program to parents of independent study students	.50
3	7	Surveying materials, equipment and spaces for independent study as to availability and usefulness	.55
	12	Planning facilities, materials and services needed for independent study	.68
	13	Estimating costs of facilities, materials and services needed for independent study	.63
	14	Selecting facilities, materials and services needed for independent study	.74
4	2	Selecting content of an independent study program in terms of attitudes, interests, and abilities	.55
	17	Planning independent learning activities in terms of students' attitudes, interests and abilities	.58
5	16	Planning and participating in evaluating the independent study program	.55
	19	Operating as a consultant on independent study to other schools	.57

TABLE 6

THE THREE FACTORS IN SECTION B: SELECTION AND ASSIGNMENT OF INDEPENDENT STUDY STUDENTS

Factor	Item No.	Item	Factor Loading
1	1	Administering diagnostic tests to prospective independent study students	.83
	2	Analyzing and interpreting results of tests given to independent study students	.85
2	3	Using teacher recommendations in selecting and admitting students to an independent study program	.59
	4	Establishing prerequisites for admission to independent study	.68
	5	Checking student cumulative folders prior to admission decisions	.60
	8	Making final decisions concerning admission to independent study programs	.56
3	7	Evaluating proposed plans or contracts of independent study students	.50
	9	Nominating students for an independent study program	.58
	10	Making decisions as to the duration of the student's independent study	.64
	11	Counseling students as to the advisability of participation in an independent study program	.58

TABLE 7

THE SIX FACTORS IN SECTION C: INSTRUCTIONAL ACTIVITIES OF TEACHERS OF INDEPENDENT STUDY STUDENTS

Factor	Item No.	Item	Factor Loading
1	16	Evaluating student progress through products of independent study work	-.55
	17	Using oral examination of independent study students for purposes of evaluation	-.54
	19	Providing conference time for independent study students when needed	-.51
2	1	Teaching learning procedures appropriate to proposed independent study projects	.51
	3	Teaching students to budget their time for independent study	.52
	4	Teaching independent study students to use interview techniques	.57
3	11	Allowing students to do things in their own way	-.75
	12	Encouraging independent study students to try new ways of doing things	-.70
4	23	Planning for independent-study experiences during the school day outside of the school facilities	-.62
	24	Keeping records other than those ordinarily kept by a classroom teacher	-.58
	25	Providing vocational information in the independent study student's area of study	-.58
5	13	Arranging for students of similar interests and abilities to work together	.63
	14	Guiding discussions of small groups of independent study students	.59
6	7	Teaching independent study students to discriminate among goals and activities	-.77
	8	Teaching independent study students to discriminate among materials and approaches	-.75

TABLE 8

THE SEVEN FACTORS IN PART II: PREPARATORY EXPERIENCES FOR THE TEACHERS OF INDEPENDENT STUDY STUDENTS

Factor	Item No.	Item	Factor Loading
1	4	Visitation to a similar experimental program in the school system	.86
	5	Visitation to a similar experimental program in the school	.78
	6	Visitation to a similar experimental program in another school system	.83
2	25	Experience in preparing reports of independent study	.77
	26	Experience in evaluating reports of independent study prepared by other educators	.73
3	7	Teaching experience in a school which used flexible scheduling	.68
	8	Teaching experience in a school which was non-graded	.70
	9	Teaching experience in a school which used team teaching	.67
4	16	Special preparation for the teaching of reading	-.66
	17	Internship in a teaching situation using independent study instruction	-.61
5	13	Research experience as a graduate assistant	.50
	27	Writing theses required in graduate work	.69
	28	Participation in research studies requiring the use of statistics	.65
6	10	Specific study and training in counseling independent study students	-.54
	11	Group conferences with other teachers of independent study students	-.62
7	3	Additional work in the subject matter involved	-.56
	14	Research experiences via independent, individual study	-.52

TABLE 9

ANALYSIS OF VARIANCE ON FACTOR LOADING INDICES FOR TEACHERS AND ADMINISTRATORS

Factors	Items Included	Teachers and Administrators
Section A		
1--Course outline and evaluation	3, 4	---
2--Communicating the program	5, 6, 9, 10, 11	.01
3--Materials and facilities	7, 12, 13, 14	---
4--Content and activities	2, 17	---
5--Acting as a consultant	16, 19	.05
Section B		
1--Admission testing	1, 2	---
2--General admissions	3, 4, 5, 8	---
3--Technical decisions	7, 9, 10, 11	---

TABLE 9 (Continued)

Factors	Items Included	Teachers and Administrators
Section C		
1--Evaluation	16, 17, 19	.05
2--Learning skills	1, 3, 4	.01
3--Encouraging experimentation	11, 12	---
4--Administrative functions	23, 24, 25	---
5--Small groups	13, 14	---
6--Student discriminatory abilities	7, 8	---
Part II		
1--Visiting independent study programs	4, 5, 6	---
2--Experience in preparing and evaluating independent study reports	25, 26	.05
3--Teaching experience	7, 8, 9	---
4--Teaching preparation	16, 17	---
5--Participation in research	3, 27, 28	---
6--Counseling experiences	10, 11	---
7--Teaching area preparation	3, 14	---

Simple analysis of variance revealed no significant difference for teachers and administrators. The mean of the total sample for item 2 was 2.56; 2.44 for item 17--item 2 was rated as "mandatory" and item 17 strongly "needed."

Of the original 19 items in Section A only 1, 8, 15, and 18 were not included in the five identified factors. These items are discussed later in this chapter.

Section B of Part I, "Selection and Assignment of Independent Study Students," contained three factors. Analysis of variance results on Section B revealed no significant differences. Of the original 11 items in this section all except item 6 were included in the three factors (Table 6). A discussion of these factors follows.

Factor 1 was identified as "admission testing" as items 1 and 2 concerned administering and analyzing diagnostic instrumentation. The total sample rated item 1 at 1.49; and the sample mean for item 2 was 1.80. Subjects may have been placing responsibility for administrations and analyses of diagnostic instruments specifically on the guidance personnel with the resultant relatively weak ratings. The mean rating indicate teachers "need" to analyze test results (item 2), and that the administration of the test is important (1.49) but not as important.

Factor 2 included items 3, 4, 5, and 8 (Table 6). These items involved recommendations, prerequisites and other general admission activities and has, thus, been identified as the dimension "general admissions." Means for the total sample for items 3, 4, 5, and 8 were 2.19, 2.09, 1.86, and 2.19, respectively. Thus, the group considered these functions to be "needed."

Factor 3 included items 7, 9, 10, and 11 which dealt with certain technical decisions related to student admissions to and pursuit of independent study. Labeled "technical decisions," this dimension had a total group mean for item 7 of 2.21; for item 9, 1.92; for item 10, 2.06; and for item 11, 2.27. Thus, teachers and administrators agreed that these were "needed" responsibilities.

Six factors were extracted from Section C of Part I, "Instructional Activities of Teachers of Independent Study Students." The items included in the factors dealt with the following dimensions of responsibility: factor 1--evaluation, factor 2--learning skills, factor 3--encouraging experimentation, factor 4--administrative functions, factor 5--small groups, and factor 6--student discriminatory abilities (Table 7).

Factor 2 included items 1, 3, and 4. This dimension, identified as "learning skills," was significantly different at the .01 level (Table 12). Administrators viewed the factor more favorably than did the teachers. Items in factor 2 were influenced considerably by ratings on item 4, teaching students to use interview techniques. Administrators rated the item 2.06; teachers only 1.62. However, both groups did rate item 4 in the "needed" range. Item 1 was rated 2.56 by administrators, 2.31 by teachers; item 3 was rated 2.50 by administrators and 2.31 by teachers. The overall importance of the factor was demonstrated.

Factor 1 included items 16, 17, and 19. These items concerned evaluative actions, as a dimension were identified as "evaluation." and were found to be significantly different as a factor at the .05 level (Table 13). Administrators rated the factor with the greatest strength. Items 16, 17, and 19 in factor 1 were rated 2.38, 1.96 and

2.72 by teachers, 2.47, 2.21 and 2.88 by administrators. This indicated, when it was considered that the analysis of variance of the individual items demonstrated no significant differences, that the point of disagreement was small compared to the agreement by both groups of the items' overall importance.

Items contributing to factor 3 (11 and 12) included encouragement of experimental approaches and as a dimension were labeled "encouraging experimentation." Teachers judged the items 2.19 and 2.44; administrator ratings were 2.35 and 2.56. There was no significant difference. The importance of the factor was demonstrated.

Factor 4 included items 23, 24 and 25 (Table 2). These items involved activities related to administrative duties and as a dimension were labeled "administrative functions." Teachers judged the items with means of 1.78, 1.87 and 1.78; administrator judged means were 1.91, 2.03 and 2.09. No significant difference was demonstrated. All ratings were within the "needed" range, thus, indicating the value of the dimension.

Items 13 and 14 contributed to factor 5, dealt with arranging and directing small groups, and as a dimension of responsibility in instructional activities were classifed as "small groups." There was no demonstrated significant difference. Teacher mean ratings were 1.80 and 2.00; administrator judgments were 2.00 and 2.03, respectively. All mean ratings were in the "needed" range.

Factor 6 included items 7 and 8. These items were concerned with helping students learn to discriminate and as a dimension were classified "student discriminatory abilities." Simple analysis of

variance demonstrated no significant difference. Teachers rated items 7 and 8 at 2.18 and 2.28; administrator judgments were identical for the items at 2.35. The importance of the factor was demonstrated by all "needed" ratings.

The extracted factors accounted for 15 of the 25 items in Section C. "Instructional Activites of Teachers of Independent Study Students." Items 1, 3, 4, 7, 8, 11, 12, 13, 14, 16, 17, 19, 23, 24, and 25 (Table 7) had factor loadings of .50 or more, thus, satisfying the criterion chosen for this study. Had the criterion for factor loading selection been set at .40 instead of .50 items 2, 5, 6, 10, 18, 20 and 22 would have been included in the six factors. Items 2, teaching library skills; 5, teaching students to write independent study proposals; and 6, assisting students in the preparation of papers for publication, were closely associated with factor 2, "learning skills." Items 18, assigning grades; and 20, using conferences as progress checks were closely associated with factor 1, "evaluation." Item 22, arranging facilities in the classroom, was closely associated with factor 4, "administrative functions." Item 10, teaching recognition and respect for individual contributions, was closely associated with factor 5, "small groups." Only items 9, 15, and 21 were not associated at least to .40 with some one of the extracted factors. Items 2, 5, 6, 9, 10, 15, 18, 20, 21 and 22 are discussed in the item-by-item analysis section of this chapter.

Seven factors were extracted from Section D or Part II, "Preparatory Experiences for the Teachers of Independent Study Students." Table 8 lists the factors and includes items contributing to the factors with factor loadings of .50 or above.

Factor 2 included items 25, experience in preparing reports of independent study, and 26, experience in evaluating others' reports of independent study and was classified as the dimension "experience in preparing and evaluating independent study reports." Simple analysis of variance demonstrated that teachers and administrators had a significant difference at the .05 level (Table 14). Item 25 was judged at 1.42 by teachers and 1.74 by administrators. Item 26 was judged at 1.46 by teachers and 1.77 by administrators. Neither group saw the tasks as having a primary importance. The fact that independent study programs are relatively recent acquisitions in many schools may have influenced the ratings. In personal interviews teachers and principals often gave credit for their independent study ideas to individual teachers or to articles in the literature indicating that the ratings on these items may not reveal their true relative importance.

Items 4, 5 and 6 contributed to factor 1, dealt with visitations to experimental programs, and were identified as the dimension "visiting independent study programs." There was no significant difference for teachers and administrators. The items were given mean ratings by teachers of 1.78, 1.77, and 1.77; administrators judged the items 1.62, 1.68, and 1.74. All ratings were in the "needed" range, thus, demonstrating the factor's importance.

Factor 3 included items 7, 8, and 9. These items had as their concern teaching experience in flexibly scheduled schools and the dimension was simply classified as "teaching experience." Analysis of variance demonstrated no significant difference for teacher and

administrator groups. Teachers rated items 7, 8, and 9 at 1.44, 1.11, and 1.27; administrator judgments were 1.32, 1.18, and 1.27, respectively. Both groups rated the items in the "of some value" range.

Items 16 and 17 were included in factor 4, dealt with special preparatory teaching experiences, and were identified as the dimension "teaching preparation." No significant difference was demonstrated. Items 16 and 17 were given mean ratings of 1.13 and 1.38 by teachers; administrator judgments on the items were 1.12 and 1.47. Both groups, thus, rated the factor's importance to be "of some value."

Items 13, 27, and 28 contributed to factor 5, dealt with research experiences, and were classified as the dimension "participation in research." There was no significant difference. Teachers judged the items at mean ratings of 1.19, 1.15, and 1.12; administrator mean judgments were 1.35, 1.29, and 1.35. Both groups rated all items as "of some value."

Factor 6 included items 10 and 11. Item 10, specific study in counseling, and 11, group conferences with other teachers, involved counseling situations and were classified as the dimension "counseling experiences." Analysis of variance on factor loading indices failed to demonstrate significant difference on the factor. Teacher mean ratings for items 10 and 11 were 1.62 and 1.87; administrator judgments were 1.91 and 2.00. Thus, both groups gave ratings in the "needed" range and demonstrated the factor's importance.

Factor 7 included items 3 and 14. Items 3, additional work in subject matter and 14, experience in individual study, were classified as the dimension "teaching area preparation." Analysis of variance

on the factor loading indices revealed no significant difference. Teachers' mean ratings for the items were 2.13 and 1.65; administrator judged ratings were 1.82 and 1.62. All ratings were in the "needed" range, thus, demonstrating the factor's importance.

The seven factors in Section D included 17 of the 28 items in the section (3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 16, 17, 25, 26, 27, and 28). Eleven items were not included in the factors when .50 or above was used as the selection criterion for factor loadings (1, 2, 12, 15, 18, 19, 20, 21, 22, 23, and 24). However, had .40 been the lower limit only items 1, participating in a similar independent study program as a student, 12, using experimental materials in national projects, and 15, tutoring experience, would have remained as discrete statements. Items 20, participating in developing an independent study program; 21, participating in special institutes encouraging independent study; 23, participating in and directing seminars emphasizing independent projects; and 24, working with small groups were so related (.40 or above) to factor 2. Items 18, experience in teaching exceptional children, and 19, methods course emphasizing independent study, were closely associated (.40 or above) with factor 4, "teaching preparation." Item 22, formal instruction in library research skills, was associated with factor 5, "participation in research." Item 2, experimentation with independent study in the classroom, was associated .40 or above with factor 6.

TABLE 10

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY FACTOR FOR SECTION A FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Factor 2*: Communicating the Program

Position	Sample Size	Mean	Standard Deviation
Teacher	229	.05	.74
Administrator	34	.32	.70

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	4.12	1	4.11	7.69
Within Groups	139.71	261	.54	
Total	143.82	262		

*Item 5: Interpreting the program of independent study to faculty

Item 6: Helping other teachers learn the responsibilities of teaching independent study students

Item 9: Informing parents of all students about an independent study program

Item 10: Informing citizens in general about an independent study program

Item 11: Interpreting the independent study program to parents of independent study students

TABLE 11

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY FACTOR FOR SECTION A FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Factor 5*: Consultations

Position	Sample Size	Mean	Standard Deviation
Teacher	229	.04	.82
Administrator	34	.28	.75

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	3.03	1	3.03	4.55
Within Groups	173.61	261	.67	
Total	176.64	262		

*Item 16: Planning and participating in evaluating the independent study program (opinion polls, etc.)

Item 19: Operating as a consultant on independent study to other schools

TABLE 12

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY FACTOR FOR SECTION C FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Factor 2*: Learning Skills

Position	Sample Size	Mean	Standard Deviation
Teacher	229	.05	.78
Administrator	34	.34	.59

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	4.37	1	4.37	7.59
Within Groups	150.46	261	.58	
Total	154.83	262		

*Item 1: Teaching learning procedures appropriate to proposed independent study projects

Item 3: Teaching students to budget their time for independent study

Item 4: Teaching independent study students to use interview techniques

TABLE 13

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY FACTOR FOR SECTION C FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Factor 1*: Evaluation

Position	Sample Size	Mean	Standard Deviation
Teacher	229	.03	.72
Administrator	34	.23	.63

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	2.00	1	2.00	4.02
Within Groups	129.92	261	.50	
Total	131.92	262		

*Item 16: Evaluating student program through products of independent study work

Item 17: Using oral examination of independent study students for purposes of evaluation

Item 19: Providing conference time for independent study students when needed

TABLE 14

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY FACTOR FOR PART II FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Factor 2*: Experience in Preparing and Evaluating Independent Study Reports

Position	Sample Size	Mean	Standard Deviation
Teacher	229	.05	.93
Administrator	34	.34	.82

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	4.43	1	4.43	5.23
Within Groups	220.88	261	.85	
Total	225.31	262		

*Item 25: Experience in preparing reports of independent study

Item 26: Experience in evaluating reports of independent study prepared by other educators

Analysis of Variance: Item-by-Item

The second statistical approach to analysis of the data was that of analysis of variance item-by-item using various groupings as the treatments. Subsamples were of unequal size, thus, simple analysis of variance was utilized. The data were tested item-by-item, with F ratios then inspected for significant differences between the various groups. The comparisons were between the following groups: teachers and administrators, independent study rater types, and teachers in broad fields.

Teacher and Administrator Comparisons

When analysis of variance results for teachers and administrators were compared F values of 3.89 and 6.76 were required for .05 and .01 levels of significance, respectively.

Seven items in the teacher opinionnaire were significant at the .01 level when analysis of variance results between teachers and administrators were considered. Their distribution was as follows: Section A -- 6, 15, 18; Section B -- none; Section C -- 4, 6, 20; and Section D -- 22.

"Responsibilities of Teachers of Independent Study Students" Section A, "Curriculum Planning for Independent Study Programs," had disagreement on items 6 (Table 15): helping other teachers learn the responsibilities of teaching independent study students; 15 (Table 16), assisting students in selecting courses in which they would be doing independent study; and 18 (Table 17), preparing written descriptions of the independent study program. Item 6 demonstrated disparity within the "needed" range for administrators (2.23) and teachers (1.85),

with administrator ratings higher. Item 15, assisting students to select courses, was rated "needed" by teachers (2.10). Administrators rated it as mandatory (2.53). Item 18, concerning written descriptions, revealed the teachers (1.27) in the "of some value" range, administrators (1.82) in the "needed" range. On each of the three items the administrators rated significantly higher possibly indicating their feeling that administrative responsibilities are shared in these areas.

There were no items in Section B, "Selection and Assignment of Independent Study Students," significantly different at the .01 level. Both groups, thus, were agreeing that items not significant already at the .05 level were either good, bad, or indifferent.

In Section C of the opinionnaire, "Instructional Activities of Teachers of Independent Study Students," items 4 (Table 18), teaching interview techniques; 6 (Table 19), assisting in the preparation of papers for publication; and 20 (Table 20), using student-teacher conferences as progress checks, were significant at the .01 level. Teachers (1.52) and administrators (2.06) rated "teaching interview techniques" (4) in the lower "needed" range, teachers considerably more so than administrators. However, even the teachers were above 1.5 or "of some value." Teachers were less enthusiastic about item 6, preparing papers for publication. Although very much in the higher side of the "of some value" range (1.50) they failed to rate the item into the "needed" range, as the administrators had (1.94). Both groups rated item 20, concerning student-teacher conferences as progress checks, very high. Teachers' ratings (2.36) fell on the

plus side of "needed" and almost into the "mandatory" area. Administrators (2.68) rated the item as "mandatory."

Section D or Part II of the opinionnaire, "Preparatory Experiences for the Teachers of Independent Study Students," had item 22 (Table 21), formal instruction in library research skills, as one on which there was a disagreement at the .01 level of significance. Teachers (1.48) rated in the high "of some value" range. Administrators (1.94) saw the item as more of a "need."

There were 12 items in the opinionnaire significantly different at the .05 level. These were as follows: Section A--11, 16; Section B--1, 10; Section C--2, 21; Section D--3, 10, 18, 23, 25, 26.

Items 11 and 16 (Section A) were in the curriculum planning area of teacher responsibility. Eleven (Table 22) dealt with interpreting the independent study program to parents of independent study students. Sixteen (Table 23) involved planning and participating in evaluating the independent study program. Administrators saw both items as having more importance than did the teachers. Item 11 was rated 2.62 by administrators and 2.31 by teachers; item 16 was rated 2.23 by administrators and 1.87 by teachers. However, in each case the items were rated needed or above by both groups as expressed in group means. This indicated that the disagreement was a matter more of degree than of kind.

"Selection and Assignment of Independent Study Students," Section B, had two items on which teachers and administrators disagreed at the .05 level--item 1 (Table 24), administering diagnostic tests to prospective independent study students; and 10 (Table 25), making decisions as to the duration of the independent study. For the

diagnostic item (1) there was meaningful disagreement; teachers rated in the "of some value" range (1.44), while administrators rated in the "needed" range (1.79). On item 10, concerning duration, it was a matter of both rating "needed" but the administrators (2.38) rating more firmly than the teachers (2.01).

Disagreement in Section C,"Instructional Activities of Teachers of Independent Study Students," was in the "needed" to "mandatory" range. On both items 2 (Table 26); teaching library skills, and 21 (Table 27), promoting initiative and self-direction by minimizing direct supervision the teachers rated "needed" plus while the administrator mean was nearer "mandatory." Both groups saw the items as vital.

Section D, Part II of the opinionnaire, "Preparatory Experiences for the Teachers of Independent Study Students," contained six items on which teachers and administrators disagreed significantly. For item 3 (Table 28), additional study in the subject matter involved, teachers rated in the higher "needed" range (2.13) while the administrator mean fell in the lower "needed" range (1.82). For item 10 (Table 29), specific study and training in counseling independent study students, of the groups the teacher mean (1.62) fell lowest in "needed" but still was above 1.50 or the dividing line between "of some value" and "needed." Administrators rated item 10, counseling training, at 1.91. Neither group saw item 18, course work or practicum in teaching exceptional

children as "needed," rather "of some value." Administrators had the lower mean rating (1.26). Possibly, the subjects needed "exceptional children" identified so that it was clear that gifted students were included. Teachers (1.59) were much less positive as a group of the "need" for item 23, participation in seminars emphasizing independent study projects, although they did rate the item in the "needed" range (Table 30). Administrators were sure it was a need with a 1.91 mean rating. Items 25 (Table 31), experience in preparing reports of independent study; and 26 (Table 32), experience in evaluating others' reports of independent study were both seen in the higher "of some value" range by teachers (1.41 and 1.46). Administrators (1.73 and 1.76), while more in favor of the items were still in the lower "needed" range. These were possibly considered skills that were needed only if the teacher directed the total independent study program.

Comparisons of Independent Study Rater Types

Comparisons were made between teachers of independent study as they classified themselves by Wells's ten types of independent study programs.

After the inception of the study other ways of approaching program classifications became much clearer. It is conceded at this point that Wells's categories were not mutually exclusive, which led to problems of interpretation for the researcher. Alexander and Hines's functional patterns of independent study are indicative

of possibilities for future study.[5] Wells's types of independent study programs utilize time-organizational patterns whereas Alexander and Hines's classes of independent study are based on the criterion of uniqueness or discreteness of function. However, for the purpose of this study Wells's categories sufficed to demonstrate differences of opinion on opinionnaire items, between groups of teachers as they identified themselves in Wells's classification schema.

Simple analysis of variance was the statistical technique used to test means of independent study rater type groups, as the subsamples were not equal in size. An F value of 1.87 was necessary for an item to be significant at the .05 level, 2.41 for the .01 level. Nineteen items were significantly different for some of the teacher groups. Seven items were significant at the .01 level. There were an additional 12 items in the total opinionnaire significant at the .05 level. Significant items by section are listed in Table 33.

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[5]William M. Alexander and Vynce A. Hines, Independent Study in Secondary Schools (Gainesville: University of Florida Printing Department, 1966), pp. 68-71.

TABLE 15

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 6, SECTION A, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.85	.73
Administrator	34	2.24	.65

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	4.46	1	4.46	8.57
Within Groups	135.77	261	.52	
Total	140.23	262		

Item 6: Helping other teachers learn the responsibilities of teaching independent study students

TABLE 16

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 15, SECTION A, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	2.10	.86
Administrator	34	2.53	.66

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	5.34	1	5.34	7.57
Within Groups	183.96	261	.70	
Total	189.29	262		

Item 15: Assisting students in selecting courses in which they would be doing independent study work

TABLE 17

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 18, SECTION A, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.27	.80
Administrator	34	1.82	.80

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	9.05	1	9.05	14.21
Within Groups	166.16	261	.64	
Total	175.20	262		

Item 18: Preparing written descriptions of the independent study program for distribution to the public

TABLE 18

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 4, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.62	.81
Administrator	34	2.06	.69

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	5.81	1	5.81	9.25
Within Groups	164.07	261	.63	
Total	169.88	262		

Item 4: Teaching independent-study students to use interview techniques

TABLE 19

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 6, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.50	.87
Administrator	34	1.94	.74

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	5.82	1	5.82	8.03
Within Groups	189.13	261	.72	
Total	194.95	262		

Item 6: Assisting independent study students in the preparation of papers for publication

TABLE 20

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 20, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	2.36	.66
Administrator	34	2.68	.47

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	3.00	1	3.00	7.25
Within Groups	108.08	261	.41	
Total	111.08	262		

Item 20: Using student-teacher conferences as progress checks

TABLE 21

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 22, PART II, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.48	.78
Administrator	34	1.94	.85

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Squares	F Ratio
Between Groups	6.17	1	6.17	9.87
Within Groups	163.08	261	.62	
Total	169.25	262		

Item 22: Formal instruction in library-research skills

TABLE 22

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 11, SECTION A, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	2.31	.75
Administrator	34	2.62	.55

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	2.80	1	2.80	5.34
Within Groups	137.02	261	.52	
Total	139.82	262		

Item 11: Interpreting the independent study program to parents of independent study students

TABLE 23

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 16, SECTION A, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.87	.86
Administrator	34	2.24	.85

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	3.88	1	3.88	5.29
Within Groups	191.45	261	.73	
Total	195.32	262		

Item 16: Planning and participating in evaluating the independent study program (opinion polls, etc.)

TABLE 24

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 1, SECTION B FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.44	.90
Administrator	34	1.79	.88

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	3.69	1	3.69	4.59
Within Groups	210.01	261	.80	
Total	213.70	262		

Item 1: Administering diagnostic tests to prospective independent study students

TABLE 25

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 10, SECTION B, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	2.01	.90
Administrator	34	2.38	.60

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	4.04	1	4.04	5.40
Within Groups	194.99	261	.75	
Total	199.03	262		

Item 10: Making decisions as to the duration of the student's independent study

TABLE 26

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 2, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	2.12	.89
Administrator	34	2.53	.66

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	4.91	1	4.91	6.50
Within Groups	197.05	261	.75	
Total	201.95	262		

Item 2: Teaching library skills to independent study students

TABLE 27

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 21, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	2.30	.74
Administrator	34	2.56	.61

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	2.03	1	2.03	3.89
Within Groups	136.19	261	.52	
Total	138.22	262		

Item 21: Promoting initiative and self-direction by minimizing direct supervision

TABLE 28

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 3, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	2.13	.79
Administrator	34	1.82	.87

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	2.72	1	2.72	4.27
Within Groups	166.27	261	.64	
Total	168.99	262		

Item 3: Additional work in the subject matter involved

TABLE 29

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 10, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.62	.81
Administrator	34	1.91	.79

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	2.52	1	2.52	3.90
Within Groups	168.68	261	.65	
Total	171.20	262		

Item 10: Specific study and training in counseling independent study students

TABLE 30

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 23, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.59	.69
Administrator	34	1.91	.67

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	3.07	1	3.07	6.46
Within Groups	124.15	261	.48	
Total	127.22	262		

Item 23: Participation in and/or direction of seminars emphasizing independent projects

TABLE 31

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 25, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.41	.81
Administrator	34	1.74	.79

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	3.04	1	3.04	4.66
Within Groups	170.21	261	.65	
Total	173.25	262		

Item 25: Experience in preparing reports of independent study

TABLE 32

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY POSITION FOR ITEM 26, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Position	Sample Size	Mean	Standard Deviation
Teacher	229	1.46	.81
Administrator	34	1.76	.65

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	2.70	1	2.70	4.26
Within Groups	165.05	261	.63	
Total	167.75	262		

Item 26: Experience in evaluating reports of independent study prepared by other educators

TABLE 33

SUMMARY OF SIGNIFICANT ITEMS AT THE .01 AND .05 LEVELS WHEN INDEPENDENT STUDY RATER TYPES WERE COMPARED BY ANALYSIS OF VARIANCE

Sections	.01	.05
A	11	12, 16
B	2	7
C	7, 15, 25	2, 5, 6, 8, 14, 18, 22
D (Part II)	8, 22	9, 10

Section A of teacher responsibilities included three items on which groups differed significantly in their ratings. Item 11 was significant at the .01 level; items 12 and 16 were significant at the .05 level. Item 11 (Table 34), interpreting the program to parents of independent study students, received ratings from 8 groups of "needed" with values from 1.80 to 2.50. Groups 8 and 10 rated the responsibility as "mandatory," with values of 2.51 and 2.60. All means were in the "needed" range or above diminishing the importance of the significance level. Item 12 (Table 35), curriculum planning responsibility for facilities, materials, and needed services, was seen most favorably by rater groups 5 and 9 (2.81 and 2.90). All groups rated in the "mandatory" range (2.51 to 3.00) except for 3 and 6 who were high in the "needed" range (2.30 and 2.30). The

difference did not seem vital when the size of all the means were considered. Item 16 (Table 36), planning and participating in evaluating the program, was not seen as favorably as had been item 12. Most groups rated the item somewhat low in the "needed" range (1.80 to 1.94). However, groups 4 and 10 ranged high in the "needed" range (2.14 and 2.40) while groups 3 and 7 rated in the "of some value" range (1.30 and 1.50). Both group samples 3 and 7 were small and the significance could possibly be distorted.

In Section B, "Selection and Assignment of Independent Study Students," two teacher responsibilities were seen significantly different. Item 2 (Table 37), interpreting diagnostic test results, was rated in the "of some value" range by the seminar group (3), in the low "needed" range by most groups (1.53 to 1.86), and in the high "needed" range (2.40) by the regularly scheduled class group (10). The difference was significant at the .01 level. Item 7 (Table 38), evaluating students' proposed independent study plans, was rated "needed" by all groups with values ranging from 1.71 to 2.50. The variation was within the "needed" range of values. This item was significant at the .05 level.

There were several responsibilities in Section C, "Instructional Activities of Teachers of Independent Study Students," on which groups disagreed. Items 7, 15, and 25 were significant at the .01 level. Item 7 (Table 39), teaching discrimination among goals and activities, was in low esteem (1.50) only for the vocational group (7). Over half of the teachers, groups 1, 2, 5, 8, and 9 rated the item as "needed" plus with values of 2.27, 2.33, 2.33, 2.36, and 2.34. Item 15 (Table 40), requiring periodic written

student-progress reports, was rated lowest (1.43) by the vocational group (7) and highest (2.44) by the "develop student responsibility" group (8). When teachers were responsible to visit the students as work was being done it may be that separate student-prepared written reports were not as imperative for these teachers. All groups, save the vocational (7), did see item 15 as strongly "needed" with mean ratings from 2.07 to 2.43. Item 25 (Table 41), providing vocational information in the area of study, was rated "mandatory" (2.71) by group 7 (vocational). Groups 4, 5, 6, 8, and 9 had means in the "needed" range with values of 2.04, 1.85, 1.80, 1.92, and 2.03. Groups 1, 2, 3, and 10 were rated in the "of some value" range with values of 1.23, 1.47, 1.10, and 1.40. Group 3, the seminar group, saw least value in the item. Approximately 60 percent of the teachers were included in the groups rating the item as "needed." Items 2, 5, 6, 8, 14 and 22 were significant at the .05 level. Item 2 (Table 42), teaching library skills, lacked the support of group 7 (work experience) and was rated "of some value" (1.36) by the vocational group. The greatest number of teachers was very much in favor of the item with groups 5, 6, and 8 rating the item in the 2.3 range. Item 5(Table 43), teaching students to write independent study plans, was seen as "needed" by all groups except the vocational (7) which placed it in the "of some value" range (1.29). Item 6 (Table 44), assisting in the preparation of student papers for publication, received ratings by groups 1, 3, 6, 7, 9, and 10 in the "of some value" range (.86 to 1.50) with group 7's mean rating the lowest of all. The other 4 groups rated item 6 in the low "needed" range (1.59 to 1.79). In other words, over 5 percent of the teachers

polled did not see this as a "needed" responsibility. Item 8 (Table 45), teaching students to discriminate among materials and approaches, was seen as strongly "needed" by all groups (2.10 to 2.45) except the vocational (7), whose mean was in the low "needed" range (1.57). Item 14 (Table 46), guiding discussions of small groups, was rated as "needed" by all groups except vocational (7), whose mean was in the "of some value" range (1.36). Item 18 (Table 47), assigning grades based on evaluation of processes and product, had a low rating (1.20) from the extra-curricular group (6). This was not unexpected as grades are not a point of emphasis for these teachers. Other groups had means in the "needed" range (1.79 to 2.50). Item 22 (Table 48), arranging facilities and equipment in the classroom for independent study, was seen as "mandatory" (2.64) by vocational (7) and as low "needed" (1.60) by the extra-curricular group (6). Other groups clustered around the middle of the "needed" range (1.80 to 2.28).

Part II of the opinionnaire, "Preparatory Experiences for the Teachers of Independent Study Students," or Section D had items 8 and 22 significant at the .01 level, and items 9 and 10 significant at the .05 level. They follow in that order of discussion. Item 8 (Table 49), teaching experience in a non-graded school, was rated by groups 3, and 10 in the lower "of some value" range (.96, .70, and .90). These groups (1, 3, and 10) included approximately 24 percent of the teacher sample. Group 4, with the largest mean (1.42) was in the "of some value" range. Nearly 74 percent of all teachers were included in groups that rated team-teaching experience as "of some value." Item 22 (Table 50), formal instruction in library

skills, was rated low "of some value" to low "needed." Group 7 (vocational) rated it lowest (.86) with groups 3 (seminar) and 6 (extra-curricular) not far above (1.10 and 1.20). Groups 8 (development of student responsibility) and 10 were also in the "of some value" range (1.44 and 1.50). The other groups (56 percent of the teachers) rated the instruction as a "needed" experience, with values ranging from 1.53 to 1.82. Item 9 (Table 51), teaching experience in a school which used team teaching, received no mean rating above "of some value." Groups 6 and 7 rated lowest (.90 and .93); groups 4 and 5 highest (1.46 and 1.48). Item 10 (Table 52), specific study and training in counseling independent study students, was rated (1.20, 1.20, and 1.50) "of some value" by the "in lieu of" group (2), by the "extra-curricular" group (6) and by the seminar group (3)--representing 15 percent of the teachers. Other groups rated in the lower "needed" range (1.51 to 1.89)--approximately 87 percent of the teachers were in these groups.

Broad Field Comparisons

Comparisons were made among groups of subjects as categorized within broad fields. Subjects taught provided the basis for decisions of placement within a given broad field. The broad fields, with exemplary subjects, chosen for use in this division of data were as follows:

1. Fine Arts--art, music, dramatics
2. Foreign Language
3. Language Arts--reading, speech, literature, humanities, etc.
4. Mathematics and Science--physical and biological
5. Social Studies--history, geography, civics, etc.

TABLE 34

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 11, SECTION A, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.85	.97
in lieu of	15	2.33	.72
seminars	10	1.80	1.03
individually planned	28	2.50	.64
large groups, small groups, independent study	33	2.36	.60
extra-curricular	10	2.30	.67
work experience	14	2.14	.53
develop student responsibility	39	2.51	.64
normally required	29	2.31	.85
regular class--all do independent study	20	2.60	.50
unclassified	5	2.00	.71

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	13.47	10	1.35	2.59
Within Groups	113.52	218	.52	
Total	126.99	228		

Item 11: Interpreting the independent study program to parents of independent study students

TABLE 35

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 12, SECTION A, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	2.58	.50
in lieu of	15	2.67	.62
seminars	10	2.30	.82
individually planned	28	2.64	.49
large groups, small groups, independent study	33	2.82	.39
extra-curricular	10	2.30	.67
work experience	14	2.64	.50
develop student responsibility	39	2.64	.58
normally required	29	2.90	.31
regular class--all do independent study	20	2.80	.41
unclassified	5	2.80	.45

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	5.63	10	.56	2.19
Within Groups	56.10	218	.26	
Total	61.73	228		

Item 12: Planning facilities, materials and services needed for independent study

TABLE 36

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 16, SECTION A, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.85	.67
in lieu of	15	1.87	.92
seminars	10	1.30	.95
individually planned	28	2.14	.80
large groups, small groups, independent study	33	1.94	.66
extra-curricular	10	1.80	.92
work experience	14	1.50	.76
develop student responsibility	39	1.79	.98
normally required	29	1.83	.76
regular class--all do independent study	20	2.40	.88
unclassified	5	1.20	1.30

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	15.61	10	1.56	2.24
Within Groups	151.72	218	.70	
Total	167.33	228		

Item 16: Planning and participating in evaluating the independent study program (opinion polls, etc.)

TABLE 37

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 2, SECTION B, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.62	.94
in lieu of	15	1.53	.92
seminars	10	1.40	.97
individually planned	28	1.68	.98
large groups, small groups, independent study	33	1.79	.78
extra-curricular	10	1.60	.84
work experience	14	1.57	.65
develop student responsibility	39	2.00	.83
normally required	29	1.86	.69
regular class--all do independent study		2.40	.68
unclassified	5	.80	.84

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	18.86	10	1.89	2.73
Within Groups	150.79	218	.69	
Total	169.64	228		

Item 2: Analyzing and interpreting results of tests given to independent study students

TABLE 38

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 7, SECTION B, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	2.38	.90
in lieu of	15	2.40	.91
seminars	10	1.90	1.20
individually planned	28	2.46	.64
large groups, small groups, independent study	33	2.03	.81
extra-curricular	10	2.00	.81
work experience	14	1.71	.91
develop student responsibility	39	2.13	.92
normally required	29	2.17	.80
regular class--all do independent study	20	2.50	.76
unclassified	5	1.20	1.30

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	15.92	10	1.59	2.15
Within Groups	161.74	218	.74	
Total	177.66	228		

Item 7: Evaluating proposed plans or contracts of independent study students (statement of the problem to be studied and procedures to be used)

TABLE 39

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 7, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	2.27	.53
in lieu of	15	2.33	.90
seminars	10	1.90	.88
individually planned	28	2.14	.65
large groups, small groups, independent study	33	2.33	.65
extra-curricular	10	2.10	.74
work experience	14	1.50	1.02
develop student responsibility	39	2.36	.54
normally required	29	2.34	.72
regular class--all do independent study	20	2.10	.91
unclassified	5	1.00	1.22

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	17.82	10	1.78	3.35
Within Groups	115.84	218	.53	
Total	133.66	228		

Item 7: Teaching independent study students to discriminate among goals and activities

TABLE 40

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 15, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	2.12	.77
in lieu of	15	2.07	.96
seminars	10	2.20	.79
individually planned	28	2.18	.77
large groups, small groups, independent study	33	2.15	.67
extra-curricular	10	2.20	.63
work experience	14	1.43	1.16
develop student responsibility	39	2.44	.82
normally required	29	2.21	.82
regular class--all do independent study	20	2.30	.80
unclassified	5	.60	.55

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	23.21	10	2.32	3.56
Within Groups	142.31	218	.65	
Total	165.53	228		

Item 15: Developing student responsibility for self-evaluation by requiring periodic written student progress reports

TABLE 41

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 25, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.23	.86
in lieu of	15	1.47	.83
seminars	10	1.10	1.20
individually planned	28	2.04	.96
large groups, small groups, independent study	33	1.85	.67
extra-curricular	10	1.80	.92
work experience	14	2.71	.61
develop student responsibility	39	1.92	.81
normally required	29	2.03	.82
regular class--all do independent study	20	1.40	.88
unclassified	5	1.20	1.30

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	35.39	10	3.54	4.88
Within Groups	158.25	218	.73	
Total	193.64	228		

Item 25: Providing vocational information in the independent study student's area of study

TABLE 42

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 2, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	2.19	.81
in lieu of	15	2.00	.85
seminars	10	1.60	1.26
individually planned	28	2.25	.80
large groups, small groups, independent study	33	2.33	.89
extra-curricular	10	2.40	1.07
work experience	14	1.36	.63
develop student responsibility	39	2.31	.77
normally required	29	2.14	.83
regular class--all do independent study	20	1.85	1.14
unclassified	5	2.20	.45

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	16.83	10	1.68	2.21
Within Groups	165.74	218	.76	
Total	182.58	228		

Item 2: Teaching library skills to independent study students

TABLE 43

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 5, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	2.23	.71
in lieu of	15	2.27	.70
seminars	10	2.10	.74
individually planned	28	2.14	.93
large groups, small groups, independent study	33	1.97	.81
extra-curricular	10	2.10	.99
work experience	14	1.29	.99
develop student responsibility	39	2.31	.77
normally required	29	2.17	.85
regular class--all do independent study	20	2.05	.89
unclassified	5	1.20	1.30

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	16.62	10	1.66	2.34
Within Groups	154.80	218	.71	
Total	171.42	228		

Item 5: Teaching independent study students to write plans or proposals for independent study projects

TABLE 44

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 6, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.46	.76
in lieu of	15	1.73	.80
seminars	10	1.50	.97
individually planned	28	1.79	.74
large groups, small groups, independent study	33	1.64	.78
extra-curricular	10	1.10	1.10
work experience	14	.86	.95
develop student responsibility	39	1.59	.82
normally required	29	1.45	.78
regular class--all do independent study	20	1.50	1.05
unclassified	5	.60	.89

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	15.58	10	1.56	2.18
Within Groups	155.67	218	.71	
Total	171.25	228		

Item 6: Assisting independent study students in the preparation of papers for publication

TABLE 45

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 8, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	2.38	.57
in lieu of	15	2.33	.90
seminars	10	2.10	.88
individually planned	28	2.21	.74
large groups, small groups, independent study	33	2.45	.62
extra-curricular	10	2.20	.42
work experience	14	1.57	.76
develop student responsibility	39	2.41	.68
normally required	29	2.38	.73
regular class--all do independent study	20	2.10	.85
unclassified	5	2.40	.89

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	10.54	10	1.05	2.06
Within Groups	111.58	218	.51	
Total	122.11	228		

Item 8: Teaching independent study students to discriminate among materials and approaches

TABLE 46

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 14, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.88	.77
in lieu of	15	1.80	.77
seminars	10	2.40	.70
individually planned	28	1.96	.74
large groups, small groups, independent study	33	2.18	.64
extra-curricular	10	2.20	.79
work experience	14	1.36	.84
develop student responsibility	39	1.95	.69
normally required	29	2.07	.65
regular class--all do independent study	20	2.05	.76
unclassified	5	2.40	.89

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	10.94	10	1.09	2.09
Within Groups	114.05	218	.52	
Total	125.00	228		

Item 14: Guiding discussion of small groups of independent study students

TABLE 47

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 18, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.69	.88
in lieu of	15	2.07	.70
seminars	10	1.80	.79
individually planned	28	2.21	.74
large groups, small groups, independent study	33	1.91	.68
extra-curricular	10	1.20	.92
work experience	14	2.50	.65
develop student responsibility	39	1.95	.92
normally required	29	1.79	1.01
regular class--all do independent study	20	1.80	.89
unclassified	5	2.20	.84

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	15.32	10	1.53	2.18
Within Groups	153.27	218	.70	
Total	168.59	228		

Item 18: Assigning independent study student grades based on evaluation of process and product

TABLE 48

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 22, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.69	.88
in lieu of	15	1.93	1.03
seminars	10	1.80	1.22
individually planned	28	1.96	1.00
large groups, small groups, independent study	33	2.24	.66
extra-curricular	10	1.60	.84
work experience	14	2.64	.50
develop student responsibility	39	2.03	.84
normally required	29	2.28	.80
regular class--all do independent study	20	2.00	.86
unclassified	5	2.00	.71

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	14.08	10	1.41	1.93
Within Groups	159.48	218	.73	
Total	173.56	228		

Item 22: Arranging facilities and equipment in the classroom for independent study

TABLE 49

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 8, PART II, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	.96	.72
in lieu of	15	1.00	.65
seminars	10	.70	.82
individually planned	28	1.43	.57
large groups, small groups, independent study	33	1.09	.58
extra-curricular	10	1.20	1.03
work experience	14	1.29	.91
develop student responsibility	39	1.33	.77
normally required	29	1.00	.76
regular class--all do independent study	20	.90	.45
unclassified	5	2.00	.45

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	13.11	10	1.31	2.64
Within Groups	108.37	218	.50	
Total	121.48	228		

Item 8: Teaching experience in a school which was non-graded

TABLE 50

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 22, PART II, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.73	.72
in lieu of	15	1.53	.83
seminars	10	1.10	.88
individually planned	28	1.82	.77
large groups, small groups, independent study	33	1.52	.67
extra-curricular	10	1.20	.79
work experience	14	.86	.77
develop student responsibility	39	1.44	.68
normally required	29	1.55	.78
regular class--all do independent study	20	1.50	.76
unclassified	5	1.00	1.22

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	14.02	10	1.40	2.44
Within Groups	125.17	218	.57	
Total	139.20	228		

Item 22: Formal instruction in library-research skills

TABLE 51

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 9, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.15	.78
in lieu of	15	1.07	.70
seminars	10	1.10	.88
individually planned	28	1.46	.64
large groups, small groups, independent study	33	1.48	.80
extra-curricular	10	.90	.57
work experience	14	.93	.73
develop student responsibility	39	1.44	.79
normally required	29	1.31	.76
regular class--all do independent study	20	1.25	.55
unclassified	5	.40	.55

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	11.75	10	1.18	2.19
Within Groups	117.00	218	.54	
Total	128.75	228		

Item 9: Teaching experience in a school which used team-teaching

TABLE 52

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY RATER TYPE FOR ITEM 10, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Rater Type	Sample Size	Mean	Standard Deviation
in addition to	26	1.58	.76
in lieu of	15	1.20	.86
seminars	10	1.50	1.08
individually planned	28	1.71	.81
large groups, small groups, independent study	33	1.82	.77
extra-curricular	10	1.20	.42
work experience	14	1.86	.86
develop student responsibility	39	1.51	.72
normally required	29	1.90	.77
regular class--all do independent study	20	1.70	.80
unclassified	5	.60	.55

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	14.93	10	1.49	2.45
Within Groups	133.02	218	.61	
Total	147.95	228		

Item 10: Specific study and training in counseling independent study students

6. Vocational--business education, industrial arts, mechanical arts, etc.

7. Administration--included guidance counselors.

The total number of subjects involved was 263. The subsamples were of unequal size ranging from 13 in foreign language to 71 in mathematics and science. Simple analysis of variance was utilized as differences among groups were identified. The F values of of 2.14 and 2.90 were needed for significance at the .05 and .01 levels, respectively. Ranking of the means was used to discriminate between groups within significant items. Because the administrators were previously compared with all teachers on the items the data were analyzed with the administration group deleted. The other six groups remained as originally constituted, with the total number reduced by 34 to become 229. The F ratios needed to demonstrate the .05 and .01 levels of significance were 2.26 and 3.11.

The analysis of variance item-by-item using seven groups is shown in Table 53. These results are not discussed by item in this report of the study. (See preceding paragraph.)

TABLE 53

SUMMARY OF SIGNIFICANT ITEMS AT THE .01 AND .05 LEVELS WHEN BROAD FIELDS WERE COMPARED BY ANALYSIS OF VARIANCE (WITH ADMINISTRATORS)

Sections	.01	.05
A	7, 13	5, 8, 12, 18
B	none	none
C	2, 4, 7, 8, 9, 11 12, 13, 19	22, 25
D (Part II)	10, 24	3, 22, 28

The reanalyzed data, without the administrator group, deleted six of the significant items revealed when the administrators were included. This indicated agreement with the earlier analysis of administrators against all teachers, previously described in this chapter. When the six broad field categories were subjected to a simple analysis of the variance there were 16 items identified at .01 and .05 levels of significance. The 16 items are shown in Table 54.

TABLE 54

SUMMARY OF SIGNIFICANT ITEMS AT THE .01 AND .05 LEVELS WHEN BROAD FIELDS WERE COMPARED BY ANALYSIS OF VARIANCE (WITHOUT ADMINISTRATORS)

Sections	.01	.05
A	8, 12	7, 13
B	none	none
C	8, 22, 25	11, 12, 13 19, 23
D (Part II)	3	10, 24, 28

Section A of the opinionnaire, "Curriculum Planning for Independent Study Programs," had four responsibilities which were seen as significantly different by the broad field groups. Items 8 and 12 were significant at the .01 level. Item 8 (Table 55), surveying community resources, was seen at least "needed" (1.69) by the foreign language group (2) with mathematics and science (4) next low at 1.84. All groups rated the responsibility as "needed." Item 12 (Table 56), planning materials, facilities, and services, was rated "mandatory" by all groups. Mathematics and science (4) was low with a mean of 2.51. Fine arts (1) was high with a mean of 3.0.

Item 7 (Table 57), surveying materials, equipment, and spaces, was rated as "mandatory" (2.55, 2.57, 2.59, 2.68, and 2.69) by all groups except mathematics and science (5), which rated it in the "needed" range at 2.35. Item 13 (Table 58), estimating costs of facilities, materials, and services, was rated "needed" by all groups. Social studies (5) was the only group with a mean less than 2.0 at 1.94. Items 7 and 13 were significant at the .05 level.

Section B, "Selection and Assignment of Independent Study Students," had no responsibilities on which the broad field groups disagreed at a level of significance.

Section C, "Instructional Activities of Teachers of Independent Study Students," contained several responsibilities on which the groups of subjects disagreed at the .01 and .05 levels. Items 8, 22, and 25 were significant at the .01 level. Item 8 (Table 59), teaching independent study students to discriminate among materials and approaches, received most support from fine arts (1) at 2.64 and least support from the vocational group (6) at 1.85. However, this item was rated "needed" by all groups. Most means were from 2.23 to 2.42. Item 22 (Table 60), arranging facilities and equipment in the classroom for independent study, was rated lowest (1.99 and 1.72) by the mathematics and science group (4) and the social studies group (5), representing over one half of the teacher subjects in the sample. The other groups rated item 22 at 2.0 or higher with the vocational group (6) high at 2.52. Item 25 (Table 61), providing vocational information in the area of study, was rated as "mandatory" (2.70) by the vocational group (6). The other groups had means between 1.53 and 1.93 in the "needed" range. Item 11 (Table 62), providing for trial-and-error

experiences, was rated below 2.00 only by the vocational teachers (6) whose value was 1.74. All other groups were in the high "needed" range, with fine arts (1) at a maximum value of 2.50. Item 12 (Table 63), encouraging independent study students to try new ways of doing things, was least important to the vocational group (6) at 2.10. Two groups (1 and 2) rated Item 12 as "mandatory" (2.79 and 2.85) with all other group means high in the "needed" range (2.15 to 2.47). Item 13 (Table 64), arranging for students of similar interests and abilities to work together, was seen as especially "needed" (2.46) by foreign language teachers (2). The other groups rated item 13 as "needed" with values ranging from 1.69 to 1.96. Item 19 (Table 65), providing conference time for independent study students, was rated as "mandatory" by all groups. The vocational group (6) was low at 2.62, while foreign language (2) was high at 3.0. Item 23 (Table 66), planning for independent study experiences during the school day outside school facilities, was rated in the "needed" range by all groups. Fine arts (1) had a mean of 2.28. Most groups had means of about 1.7. Items 11, 12, 13, 19, and 23 were significant at the .05 level.

Section D or Part II, "Preparatory Experiences for the Teachers of Independent Study Students," had four items of experience on which teacher groups disagreed at the .01 or .05 level of significance. Item 3 was significant at the .01 level; items 10, 14, and 28 were significant at the .05 level. Item 3 (Table 67), additional study by the teacher in his subject area, was rated as "mandatory" by fine arts (1) at 2.65. The other groups had means between 1.81 and 2.23 or in the "needed" range. Item 10 (Table 68), specific

TABLE 55

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 8, SECTION A, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.43	.65
Foreign Language	13	1.69	1.11
Language Arts	57	2.07	.80
Mathematics and Science	71	1.85	.71
Social Studies	47	2.09	.69
Vocational	27	2.44	.64

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	10.93	5	2.19	3.95
Within Groups	123.54	223	.55	
Total	134.47	228		

Item 8: Surveying community resources to determine usable and available ones for an independent study program

TABLE 56

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 12, SECTION A, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	3.00	.00
Foreign Language	13	2.62	.51
Language Arts	57	2.81	.48
Mathematics and Science	71	2.51	.56
Social Studies	47	2.64	.57
Vocational	27	2.81	.40

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	5.10	5	1.02	4.02
Within Groups	56.63	223	.25	
Total	61.73	228		

Item 12: Planning facilities, materials and services needed for independent study

TABLE 57

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 7, SECTION A, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.57	.51
Foreign Language	13	2.69	.48
Language Arts	57	2.68	.57
Mathematics and Science	71	2.35	.66
Social Studies	47	2.55	.58
Vocational	27	2.59	.57

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	4.09	5	.82	2.31
Within Groups	78.85	223	.35	
Total	82.93	228		

Item 7: Surveying materials, equipment and spaces for independent study as to availability and usefulness

TABLE 58

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 13, SECTION A, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.21	.70
Foreign Language	13	2.38	.87
Language Arts	57	2.39	.67
Mathematics and Science	71	2.03	.77
Social Studies	47	1.94	.82
Vocational	27	2.37	.84

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	8.37	5	1.67	2.83
Within Groups	131.99	223	.59	
Total	140.36	228		

Item 13: Estimating costs of facilities, materials and services needed for independent study

TABLE 59

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 8, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.64	.50
Foreign Language	13	2.31	.75
Language Arts	57	2.42	.73
Mathematics and Science	71	2.24	.71
Social Studies	47	2.30	.72
Vocational	27	1.85	.77

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	8.07	5	1.61	3.16
Within Groups	114.05	223	.51	
Total	122.11	228		

Item 8: Teaching independent study students to discriminate among materials and approaches

TABLE 60

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 22, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.36	.74
Foreign Language	13	2.38	.77
Language Arts	57	2.00	.89
Mathematics and Science	71	1.99	.85
Social Studies	47	1.72	.97
Vocational	27	2.52	.51

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	14.14	5	2.83	3.96
Within Groups	159.42	223	.71	
Total	173.56	228		

Item 22: Arranging facilities and equipment in the classroom for independent study

TABLE 61

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 25, SECTION C, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	1.93	.73
Foreign Language	13	1.69	.85
Language Arts	57	1.54	.98
Mathematics and Science	71	1.76	.84
Social Studies	47	1.53	.91
Vocational	27	2.70	.54

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	29.54	5	5.91	8.03
Within Groups	164.10	223	.74	
Total	193.64	228		

Item 25: Providing vocational information in the independent study student's area of study

TABLE 62

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 11, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.50	.94
Foreign Language	13	2.31	1.03
Language Arts	57	2.32	.74
Mathematics and Science	71	2.28	.78
Social Studies	47	2.04	.83
Vocational	27	1.74	.94

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	9.49	5	1.90	2.78
Within Groups	152.05	223	.68	
Total	161.55	228		

Item 11: Allowing students to do things in their own way (providing for trial-and-error experiences)

TABLE 63

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 12, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.79	.43
Foreign Language	13	2.85	.38
Language Arts	57	2.47	.63
Mathematics and Science	71	2.39	.67
Social Studies	47	2.40	.74
Vocational	27	2.15	.86

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	6.39	5	1.28	2.79
Within Groups	101.94	223	.46	
Total	108.33	228		

Item 12: Encouraging independent study students to try new ways of doing things

TABLE 64

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 13, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	1.79	.70
Foreign Language	13	2.46	.78
Language Arts	57	1.77	.89
Mathematics and Science	71	1.69	.75
Social Studies	47	1.74	.82
Vocational	27	1.96	.65

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	7.45	5	1.49	2.40
Within Groups	138.71	223	.62	
Total	146.16	228		

Item 13: Arranging for students of similar interests and abilities to work together

TABLE 65

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 19, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.93	.26
Foreign Language	13	3.00	.00
Language Arts	57	2.70	.46
Mathematics and Science	71	2.76	.46
Social Studies	47	2.62	.61
Vocational	27	2.59	.57

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	2.70	5	.54	2.26
Within Groups	53.41	223	.24	
Total	56.11	228		

Item 19: Providing conference time for independent study students when needed

TABLE 66

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 23, SECTION C, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.29	.61
Foreign Language	13	1.77	.83
Language Arts	57	1.75	.87
Mathematics and Science	71	1.68	.71
Social Studies	47	1.66	.87
Vocational	27	2.07	.83

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	7.40	5	1.48	2.30
Within Groups	143.68	223	.64	
Total	151.08	228		

Item 23: Planning for independent study experiences during the school day outside the school facilities

TABLE 67

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 3, PART II, FOUND TO BE SIGNIFICANT AT THE .01 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.64	.50
Foreign Language	13	2.00	.91
Language Arts	57	2.23	.73
Mathematics and Science	71	2.20	.80
Social Studies	47	1.81	.85
Vocational	27	2.07	.62

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	9.71	5	1.94	3.29
Within Groups	131.62	223	.59	
Total	141.33	228		

Item 3: Additional work in the subject matter involved

TABLE 68

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 10, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	1.93	.83
Foreign Language	13	1.46	1.05
Language Arts	57	1.58	.82
Mathematics and Science	71	1.62	.76
Social Studies	47	1.40	.77
Vocational	27	2.00	.68

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	7.84	5	1.57	2.50
Within Groups	140.11	223	.63	
Total	147.95	228		

Item 10: Specific study and training in counseling independent study students

TABLE 69

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 24, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	2.14	.66
Foreign Language	13	1.54	.78
Language Arts	57	1.89	.75
Mathematics and Science	71	1.56	.63
Social Studies	47	1.77	.81
Vocational	27	1.89	.70

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	6.92	5	1.38	2.69
Within Groups	114.87	223	.52	
Total	121.79	228		

Item 24: Study and/or experience in working with small groups (e.g., groups of 12 or less)

TABLE 70

ANALYSIS OF VARIANCE, MEAN, AND STANDARD DEVIATION BY BROAD FIELD FOR ITEM 28, PART II, FOUND TO BE SIGNIFICANT AT THE .05 LEVEL

Broad Field	Sample Size	Mean	Standard Deviation
Fine Arts	14	1.14	.77
Foreign Language	13	1.00	.71
Language Arts	57	.88	.66
Mathematics and Science	71	1.35	.74
Social Studies	47	1.11	.67
Vocational	27	1.11	.70

Analysis of Variance

	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio
Between Groups	7.39	5	1.48	3.02
Within Groups	109.19	223	.49	
Total	116.58	228		

Item 28: Participation in research studies requiring the use of statistics

study and training in counseling independent study students, was viewed as "of some value" (1.46 and 1.40) by the foreign language (2) and social studies (5) groups. The other groups had means between 1.62 and 2.00 or in the "needed" range. Item 24 (Table 69), experience and study in working with small groups, was rated by all groups in the "needed" range. The extremes (1.54 and 2.14) were the means of the foreign language group (2) and the fine arts group (1). Item 24 was rated at 1.56 by the mathematics and science group indicating approximately one-third of the teacher subjects was not overly enthusiastic about the study of small group dynamics. Item 28 (Table 69), participation in research studies requiring the use of statistics was seen as least useful (.88) by the language arts group (3) and was not rated above "of some value" by any group. Observations indicated that student studies sometimes suffered because of inadequacy of statistical knowledge. Means ranged between .88 and 1.35.

Summary of Open-ended Question Responses

Additional items of importance overlooked, omitted, or unknown were to be added by teachers and administrators in the individual sections of the teacher opinionnaire, "Teachers of Independent Study Students: Responsibilities and Preparation." Several items were proposed. The following listing was compiled as a synthesis--redundancies were eliminated where recognized:

Responsibilities of Teachers of Independent Study Students (Part I)

Section A. "Curriculum Planning for Independent Study Programs"

1. Evaluating of impact of independent study program on existing program (use of facilities, teacher load, etc.).

2. Recognizing that independent study teachers must have different teacher-pupil ratio.

3. Freeing program of restrictions.

4. Recognizing and providing for scheduling problems.

5. Preparing written material for students: over-all goals, method of evaluation, etc.

6. Convening consultants from different schools for exchange of ideas.

7. Promoting independent study in other schools.

8. Providing optimum conditions for all activities within given program.

9. Having an interest in independent study.

10. Relieving teacher of busy work in order that she may learn to teach.

11. Using nonprofessional help in working with small groups.

12. Substituting for standard grades such grades as "acceptable for credit" or "no credit."

Section B. "Selection and Assignment of Independent Study Students"

1. Identifying students with little ability for independent study.

2. Establishing student need and purpose.

3. Considering students' individual differences.

4. Giving every student the opportunity to participate in a certain amount of independent study.

5. Allowing independent study participation on a voluntary basis.

6. Limiting independent study to students who are capable of sustained independent work.

7. Conferring with student applicant.

8. Interviewing undecided parents.

9. Selecting students for independent study who possess high ability or have high aptitude in the field of independent study.

10. Enrolling students in independent study only when interested in the subject.

Section C. "Instructional Activities of Teachers of Independent Study Students"

1. Organizing material to be learned in a logical and sequential manner.

2. Developing as many alternatives as possible in which students may choose to do independent study.

3. Allowing students freedom of choice in independent study.

4. Making available more time for teacher supervision.

5. Making tests and answer sheets available to students that they may check their own progress.

6. Using the librarian as a consultant to the subject matter teacher.

7. Participating in a group development T-group.

8. Sharing the products of independent study with other students and teachers.

9. Encouraging the products of independent study.

10. Being supportive when discouragement is noticed.

11. Keeping motivation intrinsic by minimizing promises of awards, grades and other extrinsic rewards.

12. Taking quality of independent study experiences and products into account in the over-all evaluation of student achievement.

13. Using student oral reports for the benefit of regular classes and as a measure of work done by the independent study student.

14. Providing for maximum of student initiative and originality in selecting and developing independent study assignments.

15. Diagnosing individual capabilities and helping students to formulate worthwhile study.

16. Continuing reevaluation of students wishing to remain in independent study courses.

17. Permitting students to drop independent study if they are not successful (cannot keep up).

18. Arranging so that those who profit continue, those who do not drop out.

Preparatory Experiences for the Teachers of Independent Study Students (Part II)

Having personal relationships with persons who have directed independent study.

Major questions arise as to which of these teacher statements represent responsibilities of independent study teachers, which are actually statements of policy about the practice of independent study, and how many are expressions of wishes or prejudices of teachers. No such categories are attempted in this chapter, but such items as appeared to contribute to a description of teacher responsibilities are incorporated in Chapter V.

Summary

The data were analyzed and synthesized in Chapter IV. Factor analysis results indicated that related items had been placed within separate sections of the teacher opinionnaire. Further, the number of items could be reduced by using the identified factors and rewriting the items (Table 5)--for example, four items to replace the 11 in Section B. Simple analysis of variance was used as a test for significance of differences between groups on factor indices. The results were in agreement with the later item-by-item analyses. Analysis of variance was used to test for significant differences

TABLE 71

COMPARISON OF SIGNIFICANT ITEMS BY TREATMENT

Item	Teachers and Administrators	Independent Study Rater Types	Broad Fields With Adm.	Broad Fields Without Adm.
Section A				
5	---	---	.01	---
6	.01	---	---	---
7	---	---	.05	.05
8	---	---	.01	.01
11	.05	.01	---	---
12	---	.05	.01	.01
13	---	---	.05	.05
15	.01	---	---	---
16	.05	.05	---	---
18	.01	---	.01	---
Section B				
1	.05	---	---	---

TABLE 71 (Continued)

Item	Teachers and Administrators	Independent Study Rater Types	Broad Fields With Adm.	Broad Fields Without Adm.
2	---	.01	---	---
7	---	.05	---	---
10	.05	---	---	---
Section C				
2	.05	.05	.05	---
4	.01	---	.05	---
5	---	.05	---	---
6	.01	.05	---	---
7	---	.01	.05	---
8	---	.05	.05	.01
9	---	---	.05	---
11	---	---	.05	.05
12	---	---	.05	.05
13	---	---	.05	.05
14	---	.05	---	---

TABLE 71 (Continued)

Item	Teachers and Administrators	Independent Study Rater Types	Broad Fields With Adm.	Broad Fields Without Adm.
15	---	.01	---	---
18	---	.05	---	---
19	---	---	.05	.05
20	.01	---	---	---
21	.05	---	---	---
22	---	.05	.01	.01
23	---	---	---	.05
25	---	.01	.01	.01
Section D				
3	.05	---	.01	.01
8	---	.01	---	---
9	---	.05	---	---
10	.05	.05	.05	.05
22	.01	.01	.01	---
23	.05	---	---	---

TABLE 71 (Continued)

Item	Teachers and Administrators	Independent Study Rater Types	Broad Fields With Adm.	Broad Fields Without Adm.
24	---	---	.05	.05
25	.05	---	---	---
26	.05	---	---	---
28	---	---	.01	.05

TABLE 72

SUMMARY OF ITEMS WITH NO SIGNIFICANT DIFFERENCES

Item	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Section A						
1	1	7	43	212	2.77	0.50
2	3	16	74	170	2.56	0.66
3	16	48	101	98	2.07	0.89
4	5	24	98	136	2.39	0.73
9	12	57	104	90	2.03	0.86
10	13	102	115	33	1.64	0.76
14	2	7	101	153	2.54	0.59
17	4	25	85	149	2.44	0.72
19	24	130	98	11	1.37	0.71
Section B						
3	3	48	107	105	2.19	0.77
4	13	53	95	102	2.09	0.89
5	19	78	87	79	1.86	0.93
6	42	93	95	33	1.45	0.91
8	19	32	91	121	2.19	0.91
9	28	42	115	78	1.92	0.94
11	12	24	109	118	2.27	0.81

TABLE 72 (Continued)

Item	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Section C						
1	7	21	111	124	2.34	0.74
3	4	29	105	125	2.34	0.73
10	8	33	113	109	2.23	0.78
16	2	22	109	130	2.40	0.67
17	7	59	126	71	1.99	0.78
24	19	66	103	75	1.89	0.90
Section D						
1	27	130	85	21	1.38	0.78
2	8	59	123	73	1.99	0.79
4	5	95	121	42	1.76	0.74
5	7	94	117	45	1.76	0.76
6	4	100	112	47	1.77	0.75
7	27	124	86	26	1.44	0.81
11	12	65	126	60	1.89	0.81
12	31	115	99	18	1.40	0.78
13	32	159	57	15	1.21	0.72
14	16	102	104	41	1.65	0.82
15	26	113	94	30	1.49	0.82
16	51	146	47	19	1.13	0.81
17	17	148	75	23	1.40	0.74
18	23	124	97	19	1.43	0.75

TABLE 72 (Continued)

Item	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Section D (continued)						
19	15	109	113	26	1.57	0.75
20	6	67	135	55	1.91	0.74
21	15	101	115	32	1.62	0.77
27	51	138	52	22	1.17	0.84

between groups on individual items. Simple analysis of variance by item demonstrated that 40 items in the teacher opinionnaire, "Teachers of Independent Study Students: Responsibilities and Preparation," were not significantly different regardless of the groups of subjects used as the treatment (Table 71). Nine items (1, 2, 3, 4, 9, 10, 14, 17, and 19) in Section A of the opinionnaire, seven items (3, 4, 5, 6, 8, 9, and 11) in Section B of the opinionnaire, six items (1, 3, 10, 16, 17, and 24) in Section C of the opinionnaire, and 18 items (1, 2, 4, 5, 6, 7, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 27) in Section D or Part II of the opinionnaire were not significantly different on any of the item-by-item analyses of variance. Thus, the group or total population mean and standard deviation were assumed to be adequate in interpretations for these 40 items (Table 72).

An additional 13 items had levels of significant difference only for the "teacher or administrator" groups (Table 71). The items differing significantly only between teachers and administrators were items 5, 6, 15, and 18 in Section A of the opinionnaire; 1, 10 in Section B of the opinionnaire; 4, 9, 20, and 21 in Section C of the opinionnaire. These items revealed no teacher ratings below 1.00 (Appendix C) and in fact the mean rating disparities were: (1) within the "needed" range--5, 6, in Section A; 10 in Section B; 4 in Section C; and 23 in Part II; (2) within the "mandatory" range--9 in Section C; (3) between "needed" and "mandatory"--5 in Section A and 20, 21 in Section C; (4) between "of some value" and "needed"--18 in Section A; 1 in Section B; and 25, 26 in Part II (Table 4). Administrators had the higher mean rating on each of the 13 items just enumerated.

Only four of the items were rated below the "needed" range--items included in (4) above. The strength of rating seemed sufficient for all 13 of these items to be of concern to independent study teachers.

The results of analyzing the data by independent study rater types were of interest. First, out of 83 items there were disagreements on 19 at the .05 level, seven of these at the .01 level. Fifteen of the 19 disagreements concerned responsibilities of teachers; four concerned preparatory experiences. Points of disagreement on several items seemed fairly unimportant in that means were high or means were low within a value range (item 12 in Section A, item 22 in Section D). Disagreements in the instructional activities (Section C) were with a very small portion of the total sample, namely group 7 or the vocational group (items 2, 5, 6, 7, 8, 14, 15, and 25). On the whole, disagreements were minor among the majority of teachers regardless of group classification. Administrators were not included in this analysis by the "Ten Types of Independent Study."

The data failed to reveal sharp disagreement between teacher groups by broad fields on 67 items. The 16 items reported as significantly different at the .05 and .01 levels (Table 71) did not consistently pit the same teacher groups at extremes. On items that the author considers to be of a more direct concern to teachers in a selected field rather than to teachers in all fields the "selected" group tended to disagree with other groups of teachers. This tended to deemphasize the significance levels and emphasize the intra-range variation of the means.

Statistical findings were explicated; agreements and disagreements were reported. Teachers and administrators were found to have relatively minor disagreements when value ranges were considered. Teacher groups were found to agree on most items with the group of vocational teachers most often disagreeing significantly. It is possible that their work is of a sufficiently different nature that separate responsibilities and preparatory experiences should be listed for their group. Subjects in the sample tended to judge pre-service experiences at lower mean ratings than they did responsibilities. Implications are further investigated in Chapters V and VI.

CHAPTER V

RESPONSIBILITIES OF THE INDEPENDENT STUDY TEACHER

This chapter is primarily concerned with descriptions of the responsibilities and instructional roles of teachers of independent study students. Three kinds of teacher responsibilities are identified and described: planning the curriculum for independent study programs, selecting and assigning independent study students, and carrying out instructional activities.

Analysis of the data, described in Chapter IV, demonstrated that teachers and administrators agreed on the importance of many responsibilities listed as items in the teacher opinionnaire "Teachers of Independent Study Students: Responsibilities and Preparation." Disagreements identified in the various analyses were considered as negligible when the ranges of values were considered (Table 4). Teachers of the various subject groupings agreed that 50 out of the 55 responsibility items (Section A, B, and C) were either "needed" or "mandatory" (Table 4). Thus, the discussion in this chapter is an effort to logically arrange the opinionnaire items into categories or dimensions of teacher responsibility utilizing the findings from the factor and item-by-item analyses, personal interviews with subjects, and the author's own best hunches.

Curriculum Planning for Independent Study Programs

The data indicate that independent study teachers should assume many responsibilities in planning the curriculum for independent study programs. Those included in this section have been divided into six sub-categories: structuring the independent studies, program interpretation, materials and facilities, consultations, content and activities, and evaluation. The author believes that in planning for students' prospective independent study time, teachers need to consider the limits to be established. Students have been observed to be more secure, especially in the early days of independent study, where there is evidence that someone has thoughtfully considered the aims and goals and ways to achieve these goals. Leading or guiding students into activities that are instrumental in developing independent learners should be far different from simply announcing that a school now offers independent study privileges. In schools without adequate prethought and planning it is not uncommon to see a considerable amount of procrastination on the part of students and dissatisfaction on the part of instructors. This is not to suggest that students are to be rigidly bound to a series of steps which when unalterably followed will be guaranteed to produce independently-oriented individuals. However, much of the real strength of any leadership lies in its ability to provide a necessary amount of structure. Within the general policies or guidelines it should be possible for teachers to provide great amounts of latitude for individual study and development and to suggest the direction of desirable growths promoted by the suggested activities.

The structuring of independent studies has been described to include such important activities as preparing courses of study, course

outlines, and syllabi for the independent study programs. The author believes that a strength of any course outline or syllabus is in its identification of objectives and subsequent suggestions of possible means of fulfillment. Involved in this structuring or outlining should be the development of purposes and criteria or scales by which both students and teachers can plot the progress of independent study efforts. The data indicate that the purposes and objectives of an independent study program should be deliberately established. Purposes and objectives should fluctuate according to the types of programs to be offered and the student groups to be served. Statements of purposes by teachers presently involved in secondary school independent study plans have been grouped into the following four categories:

1. Purposes which emphasize curricular content in order to allow the student to expand his knowledge about a subject or to provide for a depth study of mathematics.

2. Purposes which emphasize learning processes in order to promote the ability in each student to learn how to learn, to learn to think critically, or to learn interviewing techniques.

3. Purposes which emphasize personal-social goals in order to foster independent motivation, to help the student develop self-reliance, or to help the student become a producer--not just a consumer--of learning.

4. Purposes which emphasize organization for individualized instruction in order to enable the student to pursue an advanced topic at his own rate of progress or to provide for diagnosing, planning, and remedying individual deficiencies in order to improve basic skills.[1]

Both teacher-made and commercially-marketed materials should be utilized to advantage in evaluating the achievement of purposes. Decisions carefully conceived in the early stages of planning

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[1]William M. Alexander and Vynce A. Hines, Independent Study in Secondary Schools (Gainesville: University of Florida Printing Department, 1966), pp. 99-100.

program structure concerning means of progress identification are not likely to be complete answers. Rather, to fill in evaluative material gaps, the idea should be to become familiar with weaknesses and strengths of presently available materials--attitudinal scales, personality inventories, achievement batteries, and so forth--and to begin organized efforts to create needed instruments or guidelines for observations.

These outlines of policy, procedure, and evaluation may result from cooperative efforts of teachers and administrators within the school, at the school system or district level, or on an even broader front such as a state, regional or nationwide basis. Regardless of the base utilized, the professional people involved, or the amount of student-parent involvement, ultimate responsibility for structuring resides with the teacher who is directing the individual independent study.

This author suggests that the development of independent study procedures should delineate in general terms the framework within which it is possible for students to fruitfully approach challenging learning activities, guided experiences in problem identification, and practice in the independent gathering, evaluating, and organizing of information to be applied in effecting the resolution of problems.

Program Interpretation

Communicating the independent study program to parents of students to be engaged in educational activities encompassed by the program is usually accepted by teachers as a shared endeavor. Respondents' ratings indicate that teachers, administrators, counselors, and central office staff should join in explaining to the total community exactly

what is being attempted in the independent study program. Central staff supervisors of secondary education can assume the responsibility of informing the public through such media as the newspaper and civic group presentations. Teachers can speak at P. T. A. meetings at various feeder schools. Teachers, counselors, and administrative staff can discuss the purposes and limitations of the proposed programs with students in the school day and with their parents at planned sessions outside the school day. Proposed programs should be discussed with all teachers, not just those involved. The guidance personnel, administrative personnel, and teacher personnel who develop the programs, guide students in course selection, and accept the independent study activities as an integral part of the school's total curriculum should explain in a meaningful manner the accepted goals and the projected methods for their achievement.

Teachers question whether communicating an independent study program should be extended to informing all citizens in general or even to informing parents of all students. Even though a need for these explanations is recognized by teachers now involved in directing independent study, the need is not reported to be so strong as that of informing the parents of students involved. In the data teachers generally viewed the question of interpreting the program of independent study to other faculty members as more important than informing all citizens, but less important than informing the parents of students involved in the program.

Another responsibility in the area of program interpretation is that of preparing written descriptions of the independent study programs. Teachers in the study do not consider this as a prime activity but they are concerned with the accuracy and completeness

of the descriptions compiled. (In some schools program descriptions are prepared by individual teachers, while in others they are a composite effort.)

Materials and Facilities

Planning of facilities, materials, and services needed for an independent study program should include a survey of materials, equipment, and spaces to determine the usable and available ones. This survey could include community resources and determine the usable and available ones there as well. Thus, lists can be compiled of speakers or consultants available to students, of industrial laboratory facilities where students can pursue studies and personnel willing to assist students in these studies, and of potentially useful library materials collected in various community facilities. Logically, the next procedure involves selecting facilities, materials, and services needed for independent study. Estimating costs is included in each of these activities.

Types of usable facilities and materials within the school might include the following: school library, classroom library, departmental resource center, science laboratories, language laboratories, study rooms, individual study or work spaces, teaching machines, tapes and recorders, records and phonographs, microfilm and projectors, and reading improvement devices. Inadequate facilities are major problems in several schools with existent independent study programs. The major obvious inadequacy is the insufficient number of small study spaces. Some schools alleviate the problem somewhat by placing carrels in the library, by making study stations available in hallways, and by providing an extra period in the daily schedule.

Inadequate resources are also mentioned as a problem area. Many schools report that a plethora of additions of materials are needed in order for a variety of studies to be conducted. The broader the range of student studies the greater are the reported demands on books, materials, and facilities. It is unlikely that any secondary school will have or be able to afford materials needed in some depth studies undertaken by students. Some schools have found, however, tremendous untapped resources in their communities. Clearly, adequate provision for facilities, services, and resources should result in realistic teacher workloads, sufficient available spaces, and an abundance of materials and other resources.

Consultations

Responsibilities in consulting listed in the opinionnaire include service to another school in the capacity of a consultant, attendance at group meetings or conferences where consultants brainstorm and otherwise share ideas, and the promotion of independent study in other schools.

Teachers who are able to present in a comprehensible manner the form and substance of an independent study program should be assets in at least two ways. One, expansion of many independent study programs has been explained in terms of the quality, enthusiasm, and initiative of its proponents. Two, success has fostered additional success, especially where others were made aware of the why, what, and how factors involved. When it is apparent that a given task can be accomplished in a typical school setting, other teachers are more willing to consider the advantages and disadvantages of independent study goals, methodology, and achievements. A number of schools

visited have been influenced either to originate or to influence the direction of their independent study efforts by enthusiastic reports in the literature or because of contact with one individual extremely interested in independent study possibilities. Even where programs originate within a school as the result of an individual teacher's efforts these individuals frequently give credit to outside influences.

If one of the major objectives of secondary education is to promote and develop habits of continued learning, then, as the data indicate, interested and skilled practitioners should assist others interested in learning how to set up and direct independent study programs. Within individual schools there are often valuable contributions that can be made by individuals to other staff members. Administrators polled recognize the importance of sharing techniques, procedures, and successes within the department, school, or district, to an even greater extent than teachers are willing to admit. In-service planning days provide one time for implementing greater amounts of joint participation among teachers. Another possible procedure is that of scheduling planning sessions or periods so that most if not all teachers working with a given program have the same work and planning periods. Teachers, then, can exchange ideas and methodological approaches as they plot strategies for the promotion of habits and attitudes inherent in independent learning situations. Conferences dealing with problems of individualized schedules of student and teacher time, available spaces and resources, and the state requirements governing units of credit have proved to be useful.

Other types of cooperative action include investigating pertinent research studies, visiting other schools with independent study programs, and video-taping micro-teaching situations.

Content and Activities

Content and activities should be planned in terms of students' attitudes, interests, and abilities. Content is flexible and fluid--there possibly will be no two students pursuing identical studies. There is content, however, regardless of the teaching-learning situation under consideration. Independent study programs with general areas of content identified and scores of possible activities compiled supply general direction for both teachers and students. Flexibility allows for the redirecting of efforts into additional areas of student interest and student concern.

Types of activities observed in independent study programs include planning library research; laboratory research; creative efforts, such as creative writing, constructing, making, building, painting, etc.; and field experience, such as working or doing research in the community.

Evaluation

The sixth sub-category deals with planning and participating in the evaluation of the independent study program. This might take the form of estimating effects on existing programs and of sampling opinion, measuring achievement,and following student successes out of the school. Such studies make it possible to identify positive attitudes toward the program and problem areas in need of constructive reappraisal. Such studies provide indices of success or failure of

the independent study program that can be useful in making decisions concerning directions to proceed. The author believes that expansion or retrenchment can be intelligently considered only when such indices exist.

Selection and Assignment of Independent Study Students

Selection and assignment of independent study students entails responsibilities often assumed by guidance and administrative personnel for the regular curricular offerings. These personnel can often lend assistance in the establishment of sensible, logical, and orderly procedures for disseminating information so that interested students can be knowledgeable concerning the existence of independent study possibilities. Teachers, in conjunction with other personnel, should take an active role in establishing and administering indices of selection. In addition, teacher influence can play a prominent role in the assignment process. Discussion of these responsibilities is organized into three general topics--role of testing, selection criteria, and general admissions tasks.

Role of Testing

Teachers assigned time to guide independent study students as a part of their workload face the problems of who, why, and for how long. The "who" and "why" decisions are usually based on the philosophies undergirding individual types of independent study programs. If every student is to be given an opportunity to participate in a certain amount of independent study, for example, then diagnostic measures will be used to identify attributes most common to students who are successful in their endeavors at independence. The other needed

characteristics can then receive specific attention at appropriate times and places. If, on the other hand, the program is to be available only to selected students, whether selection be by ability, aptitude, interest, certain academic prerequisites or some other limiting factor, diagnostic tests administered to prospective students should have additional aims. Thus, student interest can be utilized as the only limiting factor to independent study admittance. Achievement batteries can then be utilized to identify areas of apparent weakness whether in skill or knowledge within a subject area. Students can be encouraged to develop and pursue studies including activities appropriate to the strengthening or building in these areas of weakness. Schools surveyed that chose to limit independent study membership to high ability students found that by using achievement scores, intelligence and aptitude quotients, and teacher recommendations that students could be admitted to do independent study in science but not in some other subject area and vice versa. This indicates that a student's ability to work in any given area is not perfectly correlated with his abilities in other areas.

Selection Criteria

Selection indices that have been identifiable in various independent study programs include the following:

1. Limiting independent study to students who are capable of sustained independent work.

2. Selecting students for independent study who possess high ability or have high aptitude in the field of independent study.

3. Enrolling students in independent study only when they are interested in the subject area.

4. Giving every student the opportunity to participate in a certain amount of independent study.

5. Identifying and disallowing students with little ability for independent study.

6. Allowing student participation in independent study to be on a voluntary basis.

Teachers have considerable influence in admissions decisions. Their discretion in decision-making can be professionally understood and defended when decisions are consistently based upon an apparent philosophy and its implications. As criteria for selection are established, for example in terms of the six listed indices, responsibility for their implementation is implied. If students are to be judged on capability of sustained independent study, high ability in a discipline, and intensive interest in an area of study, instructional personnel face tasks inherent in subsequent activities. Professional integrity should yield honest, thoughtful evaluations and recommendations for either approval or rejection. Parental pressures as an obstacle to such integrity should be surmounted. Administrators interviewed listed teacher recommendations more frequently than any other factor when questioned concerning the methods of screening students. These teacher recommendations are often based on factors other than the previous letter grades earned. Student ability, interest, and level of technique mastery are most often indicated as the prime considerations for the teacher making the judgments. Final assignment of individual students, or allowance of entry, then, can be based on professional judgment of individual need and purpose in relation to the independent study program's stated objectives.

General Admission Tasks

Regardless of the student selection criteria accepted as viable there are certain tasks identified in the collected data for

which the teacher assumes responsibility. General admissions procedures involve the independent study teacher in establishing prerequisites for admission into the various types of independent study, checking student cumulative folders prior to admission decisions, using teachers' recommendations in selection, and admitting students to an independent study program, and in making the final decisions concerning admissions.

Various tasks, including the following, should result from these teacher activities:

1. Identifying student need and purpose.
2. Considering individual student differences.
3. Conferring with student applicants as to the advisability of participation in an independent study program.
4. Interviewing undecided parents.
5. Assisting students in selecting courses in which they would be doing independent study.
6. Nominating students for an independent study program.
7. Developing and distributing application forms for independent study programs.
8. Administering diagnostic tests to prospective independent study students.
9. Analyzing and interpreting results of diagnostic tests given to independent study students.
10. Evaluating proposed student plans for an independent study to establish topic and student suitability.

All independent study programs do not require all of these activities. Any given type of independent study program, however, can be expected to include several, if not all, of these characteristic tasks. Several responsibilities in the selection and assignment of students to do independent study are also applicable in a later discussion of instructional tasks, activities, or roles.

The author believes that instructional personnel should become involved in the selection process if there are to be selective criteria

of any limiting fashion. Individual student successes are often largely determined in selectively-oriented independent study programs by the thoroughness of the screening procedures: students admitted to any independent study program should have the possibility and probability of success in that program.

Instructional Activities of Independent Study Teachers

The independent study teacher faces the heart of any educative task--deciding what instructional activity will best promote the desired attitudes, skills, and processes. Crucial success factors in most instructional programs are believed to center in the instructional act itself. Execution of planning responsibilities and selection activities is important but the "curriculum planned" and "curriculum had" do not always coincide.

Instructional activities are discussed here as they relate to the following areas: planning individual studies; directing the learning of skills necessary to carry out the approved independent study plan; counseling of independent study students; working with small groups; encouraging experimentation; evaluating student progress, process, and product; and administrative activities and general supervision.

Planning Individual Studies

Individual student studies are the result of joint efforts in planning. Although sometimes difficult for teachers to accept, their role in planning should be that of making possible alternatives visible to prospective independent study students. Individual student's capabilities, once diagnosed, should assist in reaching decisions as worthwhile studies are formulated.

An exemplary planning session might go as follows: a student submits a written prospectus or plan of a study to be done in the field of history. He plans to work on his own rather than attend class since he has already mastered the skills and concepts that are being studied in regularly scheduled classes. The teacher charged with the direction of his efforts examines the prospectus and makes suggestions, often in the form of questions. The teacher and student reach agreement on the acceptability of the problem, degree of sophistication to be attempted, and the appropriateness of planned methodological approaches. Investigations are conducted to ascertain availability of materials and of facilities. They plan together for future conferences in which to talk about progress and problems. They may agree on the need for periodic written reports to be submitted by the student.

In the planning of individual studies two of the major aims could be to provide for a maximum of student initiative and originality in the selection and development of independent study assignments and to keep motivation intrinsic by minimizing promises of awards, grades, and other extrinsic rewards. Most programs do involve either credits, grades or both--students report concern more with opportunity to work on a topic of concern than with the grades and credits.

Developing Needed Skills

After a suitable endeavor has been planned by the student, with teacher guidance available as needed, and has been approved by the instructor, attention to the appropriate skills necessary to complete the plan becomes a priority. At times this requires deliberate teaching of the study procedures appropriate to proposed independent study

projects. Teaching independent study students to write plans and proposals for projects may be prerequisite to the exploration of other learning skills.Students should gradually become skilled in proposal development allowing less emphasis and assistance from the instructor. Practice-gained experience is a readily available solution to inadequacy in the skill. Other skills to be taught or developed include techniques of research, the use of a library, the use of the interview, organization and critical analysis of materials, applications of theory, and reserving judgments until after investigations are made. Students learn to discriminate among goals, activities, materials, and approaches through conscious planning and direction. Challenging learning activities; guided experiences in problem identification; and practice in the independent gathering, evaluating, and organizing of information to be applied to problem resolution are reported by respondents to be vital in the promotion of the objective "learning how to learn independently."

The teacher needs to be skilled in a way of teaching that encourages independent exploration of a variety of sources of information. The teaching-learning style conducive to the development of skills of independent learning involves students in planning of learning experiences, develops projects that require gathering of a variety of information, develops study activities that require inquiry into a topic, encourages students to seek out good reasons for their conclusions, teaches students skills of note-taking and organization of information, provides opportunity for team learning projects, encourages students to seek background information for better understanding of current topics, provides enrichment materials, regularly provides time

for pupils to browse and discover the variety in materials, and teaches specific skills of problem formulation and analysis and outline-development.

Counseling Independent Study Students

The teacher "must teach in the sense of arranging superior conditions for learning. She becomes an organizer and manager of learning experiences . . .." The teacher is to have more time "to see that all parts of the student's education fit together . . . more time for discussion and creative interaction."[2] Counseling of independent study students has often been limited to the contact the student has with the instructor in initiating the study or in evaluating study results. Teachers believe more contact seems to be beneficial when spaced throughout the duration of individuals' studies. Observation confirms that conference purposes can include being supportive when the student is discouraged, helping the foci remain central, evaluating progress, and giving assistance in location, selection, and analysis of sources and materials. Individual conference situations call for understanding and patience and may involve different facets of small group dynamics.

Many teachers have referred to their consultation time as the most vital part of any successes attributed to their independent study programs. They suggest that regular schedules of appointments are quite useful in addition to those "as needed" moments spent together. However, availability of the teacher has been reported as more important that the frequency or number of visits.

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[2]Edgar Dale, "The Teacher and Technology," The News Letter, 29 (October, 1963), 2-3.

Working with Small Groups

Students need experience in working alone, in working with an instructor in a one-to-one relationship, and, in addition, in working with small groups of their peers. Teachers believe independent study students need to learn to recognize and respect the differing contributions of individuals. Students interested in similar topics should be able to share ideas, approaches, and findings.

Brisk and challenging discussions will be more likely to occur when responsibility has been assumed for securing adequate facilities and agenda decisions have been based on mutual interests. The most difficult part of the teacher's role is to remain in the background of actual discussions while managing to steer student thoughts into the fruitful examination of possibilities about to be overlooked or to question the sources and logic underlying questionable conclusions. The data reveal two evident responsibilities: first, to arrange for students of similar interests and abilities to work together; secondly, to guide discussions of small groups of independent study students.

Encouraging Experimentation

Teachers believe that students should be allowed to do things in their own way--to have an opportunity for trial-and-error experiences. Independent study students should be encouraged to try new ways of doing things. The fact that their methodology is new only to them is inconsequential. Instructional personnel are sometimes guilty of pressing "their" method as "the" method. The earlier discussion of independent study techniques mentioned that the teacher does have the responsibility to guide development in students. Yet, the aims of

independence, initiative, creativity, scholarship, included in the school's goals and philosophy of independent study should remain paramount concerns.

Evaluation

The author believes that evaluation is one of the two major responsibilities of instructional personnel. Teaching is two-pronged: the teaching act is not totally effective unless evaluative actions are carefully conceived and implemented. Progress depends in large measure on the success of evaluative efforts. Not only is responsibility reported, it is recognized in the field as the means by which program refinement can be rationally and logically planned.

Progress of independent study students can be measured or evaluated in terms of such growths as increasing competence, acquiring needed skills, and developing techniques and attitudes inherent in exploratory studies. Evaluation could conceivably occur of either process or product, though ordinarily product alone would be used only when it demonstrates the processes utilized. Specific attention to the gamut of aims and goals in independent study should make it considerably more difficult to neglect process and product as integral endeavors to be jointly evaluated.

Oral examinations of students either by the directing teacher, a selected panel of experts, or knowledgeable peers have been observed to aid in the establishment of opinions concerning the quality of achievement. Tests and answer sheets have been provided so that students could check their individual progress in certain types of independent studies. Conferences have proved useful as evaluative tools--to see that steady progression occurs and to gain insights into the

individuals' achievements and technique development. This conference time has been planned either as a regular part of student and teacher time or as it was needed by the student. As strides are taken toward the development of student responsibility for self-evaluation, written progress reports from students are often helpful.

Continuing reevaluation of students wishing to remain in independent studies allows those who are not successful to drop out. Continual abrogation of responsibilities inherent in independent studies should become evident and may result in the decision to drop a student. Those students profiting from their opportunities should also be identifiable and,thus, remain eligible to continue in independent situations.

One other type of result involved in evaluative decisions has been to allow independent study students to share their achievements and products with other students and teachers. Student oral reports and explanations of attempted studies though presented for the benefit of other students give an additional opportunity to the persons responsible for evaluation and growth to examine the quality of independent study experiences and products. Opportunities to share experiences and products, to check tests on their own, and to decide whether or not to remain in independent study are possible ways to maintain intrinsic drive.

The assignment of students doing studies classified within independent study programs to an instructor brings with it the responsibility to continually reassess the philosophy, aims, and achievements of independent study, as well as to assess student achievements, skills, and attitudes development. Program modifications,

thus, should be based on sound evaluative observations and decisions. Empirical data are often scanty but sound professional decisions can be abundant.

Administrative Activities and General Supervision

Independent study teachers find that planning and executing administrative functions adds to program effectiveness. Making certain an appropriate time and place are available to the student engaged in independent study pursuits is one such activity or function. Though the administration does have a basic responsibility for such planning there are many occasions when the instructor realizes the needs and can more expeditiously arrange for their fulfillment. This might entail simply the arrangement of facilities and equipment in the classroom. On a broader scale, however, it might mean arrangements on a school-wide or even community-wide basis. Planning for independent study experiences during the school day outside school facilities often enhances total program effectiveness and appeal. Another administrative duty of the independent study teacher is that of keeping records on independent study students other than those ordinarily kept by a classroom teacher: for example, the number and duration of progress conferences, schedules of different times and facilities, and listings of community citizens willing to give assistance.

Teachers have reported that ascertaining student presence or absence; evaluating skills, processes, and products; informing other teachers and students' parents of program aims and accomplishments; and giving assistance as needed either formally or informally are exemplary supervisory duties.

One school visited employed a full-time independent study coordinator. This individual handled many of the supervisory and administrative tasks often expected from independent study teachers. The coordinator kept extensive records on each student in independent study. These included attendance, topic plans, written progress reports, and the amount of time spent in various independent endeavors. Reportedly, the addition of a full-time coordinator greatly strengthened their program--teachers felt student time was more wisely used and that more students were able to participate because of better provisions for supervision.

Summary

Teacher responsibilities in curriculum planning for independent study programs were discussed under the following six sub-categories: structuring the independent studies, program interpretation, materials and facilities, consultations, content and activities, and evaluation. Teachers charged with the direction of students pursuing independent studies were considered to be responsible for enumerated activities such as: establishing purposes and objectives and identifying developmental procedures; assisting other teachers and the community to understand the independent study program; identifying needed materials, facilities, and services and their costs; helping other schools and teachers to learn the independent study teacher roles; planning content and activities for particular individuals; and estimating effects of independent study programs on other facets of school life.

Three categories of responsibility were utilized in descriptions of selection and assignment activities. These areas of competence

involved testing, selection criteria, and tasks of general admissions. Teacher competencies needed were reported to include: utilizing diagnostic tests or instrumentation; developing selection indices related to program goals; and making decisions as to prerequisites, acceptance and assignment of students, and period of duration.

Instructional activities of teachers were considered within the following dimensions: planning individual studies, directing the learning of skills, counseling students working with small groups, guiding experimentation of students, evaluating students, and executing supervisory functions. Activities were reported to include competences such as: making possible independent study alternatives visible to independent study students; promoting appropriate learning skills necessary to complete an independent study plan; encouraging independent exploration of source materials; utilizing individual conferences to maintain contact with independent study students; promoting small group discussions for students interested in similar topics; urging or encouraging students to try new ways of doing things; examining students' results; and performing supervisory tasks.

CHAPTER VI

PREPARATORY EXPERIENCES FOR THE TEACHERS OF INDEPENDENT STUDY STUDENTS

A major barrier to the implementation of independent study plans, emphasizing as their objective the development of individuals interested in continuing their learning after formal schooling has ended, is the lack of school personnel interested in and competent in the direction of independent study. Dominant practices in secondary education emphasize the teacher as "teller" and "tester" rather than as a helpful and available resource. Patterns of teacher education include little, if any, independent study and tend to reinforce present dominant teaching practices. The nature of independent study has generally remained unexamined. Most teachers, as a result, have not understood its nature or rationale. They have remained unchallenged by its possibilities and without the skills to guide it.

In personal interviews held with over 200 teachers, teachers failed to indicate that their college preparatory programs had been of significant value, in terms of their assignment to give direction and guidance to students involved in independent studies. The interviews did consistently elicit statements of specific responsibilities expected or assigned these teachers of independent study students. A considerable number of responses to open-ended items

on an opinionnaire administered to teachers and administrators indicated that inadequate preparation of teachers was a source of difficulty.

Part II of the teacher opinionnaire, "Teachers of Independent Study in Secondary Schools: Responsibilities and Preparation," included 28 items which were designed to elicit collective judgments on the proposed preparatory experiences. As was noted on Table 4 and in the discussion of individual items in Chapter IV, thirteen of the experiences were judged in the "needed" range and fifteen of the experiences were rated in the "of some value" range. Teachers' mean ratings were consistently lower for items in Part II than on the responsibilities items in Part I of the opinionnaire. This was somewhat disturbing since a concerted effort had been made to include as items experiences related to the development of the competences in Part I identified as "needed" or "mandatory"--the judges, in reporting on the validity of the opinionnaire items had agreed that Part I and Part II were so related. Further reflection, however, revealed several possible explanations for this disparity in ratings between competences required and appropriate development experiences. First, since the teachers in the sample had not according to their own reports, participated in such experiences they might construe the high rating of an opinionnaire item as a reflection on their abilities to direct independent studies. If it were possible to get practitioners to look at novices or first-year-teacher needs their responses might change. Second, it is difficult to rate activities as "needed" when they have not been personally experienced. Teachers trained or inducted into independent study based on the stated experiences in the opinionnaire, thus, might find it easier to see the

importance of many more listed items. Third, there is the possibility that teachers felt acceptance of experiences as "needed" might entail further schooling for themselves. Should they reject the notion of attending summer sessions and workshops this might influence the strength of their ratings on the opinionnaire items. Fourth, since these teachers learned by trial-and-error, they may have felt that no formal experience was necessary.

After considering the influencing variables the decision was made to present experiences useful in a pre-service teacher education program based on the opinionnaire items of experience (Chapter IV), suggestions in the literature (Chapter II), and the author's own observation of independent study teachers at work. Ratings on items are considered to reflect teachers' and administrators' opinions at this time and the program is offered with the understanding that new data will be needed from future participants. With conscious effort these proffered learning experiences can be utilized within many current teacher-training plans.

This discussion utilizes two categories of experiences needed: "general theory and practice" and "pattern specialization." An attempt is made to identify types of activities and experiences that promote the skills and abilities previously demonstrated as those needed by a teacher directing independent studies.

The Preparatory Experiences Needed

Prospective independent study teachers can share many types of experiences as they learn about the general theory and practice of independent study. They will, in addition, need to choose some area

of subject specialization. Specialization would emphasize learning of the skills and competences necessary and useful in directing independent studies of secondary school students involved in one of the functional plans such as in the patterns of independent study described by Alexander and Hines (USOE Project 2969).

General Theory and Practice

A variety of methodological approaches should prove useful as teachers or prospective teachers of secondary school independent study students gain knowledge and experience in the content of general theory and practice of independent study. Lectures, small group situations providing for interaction and reaction, and individual study are examples of such methodological techniques. Topics to be explored in the general theory and practice of independent study might include:

1. The purposes and nature of independent study.

2. Procedures for initiating plans for independent study.

3. Evaluation and its role in independent study.

4. Student human development.

5. Environmental and hereditary influences on intelligence, motivation, creativity, and learning how to work independently.

6. Methodologies of research in the varied disciplines.

7. Applicable media and technologies.

8. Individually planned curricula--how to assist secondary school students in planning independent study topics.

9. Student-teacher decision-making.

10. The independent study teacher as guide and counselor.

11. Effective human relations in group processes.

12. The facilitating and helping functions.

13. Teacher and student self-evaluation.

Relevant published research and speculation, outstanding practitioners and competent theoreticians, and selected laboratory experiences could provide materials and situations suitable for investigations, observations, and reactions of prospective independent study teachers.

Three areas in which intensive preparation could be undertaken by prospective independent study teachers are: identification and solution of problems; common and unique human characteristics; and developmental patterns of cognitive, affective, and physical growth. Small group, seminar-type situations which offer opportunities for extensive individual exploration and study could be utilized as the basic methodological procedure.

Identification and Solution of Problems.--Experiences in problem identification and solution could center around hypothetical situations dependent for solution on students' understanding of basic theoretical assumptions, as well as in experientially based, observable materials. Trainees could investigate, through independent study, these hypothetical and actual problems. Problems could be interdisciplinary as well as field-oriented and, thus, require a knowledge of and skill in the application of research techniques and methodology inherent in the several disciplines or areas of knowledge. Specific instruction in and demonstration by application of the necessary research skills could be effectively assimilated into the seminar agendas. The competences acquired in applications of disciplinary research techniques should strengthen self-confidence. Thus, teachers should be

better equipped to assist secondary school students as the latter learn how to tackle new problems. It is in the area of problem-solving in particular that prospective independent study teachers could do individual independent studies under the direction of competent personnel. Experience in working through a problem from beginning to end would seem logically to follow from the problem identification and solution experiences.

Common and Unique Human Characteristics.--The second area of preparation is that of acquiring experiences in the recognition of commonality and uniqueness in students. The ability to identify and understand human differences should make it possible to encourage individualistic, creative student efforts. A major emphasis could involve study of experiental and genetic contributions to individual differences. Caste and class as manifestations of environmental influences could be considered in relation to student potential. Some common student problems reported in schools surveyed involved feelings of inadequacy, frustrations, and tunnel vision in methodology. A better understanding of uniqueness could prove useful in working with these commonalities. Encouragement of student variability and even the ability to work with independent study students should improve as trainees become skilled in identifying and empathizing with student-felt needs. Needs of primary concern to independent study students according to teachers now guiding independent study are often related to how to identify, research, and solve problems (topics) with a minimum of assistance. Specific guidance courses involving effective theory and methodology may be useful. A

practicum with experientially based situations could afford opportunities for trainees to work with independent study students in laboratory situations.

Developmental Patterns of Cognitive, Affective, and Physical Growth.--Investigations of individual variability are closely associated with the third area of concern, that of human development. Prospective independent study teachers could explore research on the modifiability of cognitive, affective, and physical development. Extensive reading in human growth and development, observations in planned laboratory situations, and individual projects are feasible learning activities.

Specialization

In preparing to meet the responsibilities of an independent study teacher, prospective or in-service teachers might find it helpful to engage in experiences in the following areas: planning individual studies, administering and interpreting diagnostic tests, learning skills needed by independent study students, teaching independent study students, and doing independent study. Each of these experiences could be incorporated in the activities planned to promote subject-major competencies. Experience in planning individual studies could involve both theoretical and laboratory settings.

Planning Individual Studies.--Theoretical and practical applications could be formulated in delineating purposes of an individual independent study; in guiding content selection based on knowledge or student attitudes, interests, and abilities; in developing criteria and scales for evaluating secondary school student successes and independent study teacher successes; and in surveying, planning, and experimenting with materials, facilities, and approaches in relation

to student independent study activities. Student and teacher evaluations of progress could be clinically examined in laboratory situations through the use of small group and individual conferences, through inspection of products of independent study, through observation of processes employed by students, through oral examinations of students, and through team conferences with other teachers who have worked with the students.

Administering and Interpreting Diagnostic Tests.--A knowledge of kinds of available psychological and achievement tests is prerequisite to the exploration of possible uses for these tests. Possibly this knowledge could be developed in professional courses closely allied with studies in a major field. Administering and interpreting commercially prepared instruments for diagnostic purposes might lead into instruction and experience in the preparation of diagnostically oriented, teacher made tests. There, possibly, might be a need to develop certain minimum statistical levels of competence. Again, theoretical formulations and laboratory situations could be utilized for both direct instruction on statistical techniques and their uses in interpretations, and judgments as to effectiveness of the tests now available. Laboratory situations, available in schools utilizing independent study as a teaching technique, could provide opportunities to administer, analyze, and interpret results of diagnostic tests taken by independent study candidates. Skill in testing and test interpretations could be supplemented by experiences in making admissions and assignment decisions. The variety of data available in the typical secondary school could be examined as it relates to the making

of decisions concerning a student's admission to and the duration of his participation in an independent study program.

Learning Skills.--Teachers may become better able to guide students in the learning of needed skills as they study their academic and professional courses by gaining directed experience in the teaching of learning skills (such as note-taking), library skills (such as using the guide to periodical literature), and interview techniques (such as used in a sociological case study). Direct experience could be followed by individual studies--to demonstrate grasp of techniques and understanding of technique applications. Prospective independent study teachers may learn through their own trial-and-error experiences how to provide for trial-and-error experiences--in attempting to assist independent study students to discriminate among materials and approaches, to make choices among goals and activities, to budget time, to try new ways of doing things, and to accomplish their work in their unique ways.

Teaching Independent Study Students.--A variety of professional teaching experiences could be arranged for teacher trainees. Indirect experience is possible through the use of simulated situations, video-taped independent study student-teacher interaction, and tape recordings of interviews with consultants and students. More direct experience can be gained within schools having independent study programs in operation through visitations and observations and by serving in internships. Micro-teaching is feasible--laboratory experiences, where trainees work with independent study students, can be followed by critiques of the video-tape recorded, micro-teaching experience. Other direct experience is available as one teaches in a school

offering independent study opportunities to students or that has an experimental type program--team-teaching, non-graded, or flexible scheduling.

Participating in Independent Study as a Student.--Participating in independent study as a student was often listed by teachers interviewed as a "needed" pre-service experience. Thus, independent study has been emphasized as a learning technique for pre-service teachers, as they study in general theory and practice and in a selected specialization. In addition, the author believes that there should be extensive provision for independent study within the discipline chosen for a major, with the focus on making provisions for independent study at the secondary level. This independent, directed study could include work in areas which emphasize the individual--cultural anthropology, group dynamics, and so forth. Collaboration with skilled researchers and even the association with people involved in intensive research should prove beneficial.

Summary

Exploratory thinking resulted in several reasons why teachers might tend to rate the listed experiential statements lower than they judged the competences. Presupposing that teachers without direct experience in the proposed activities might not be the best judges of what experiences are the appropriate ones allowed a program of activities and experiences to be suggested.

The experiences described were classified as either in "general theory and practice" of independent study or in a given "area of specialization." "General theory and practice" included suggested areas of preparation such as identifying and solving

problems, recognizing common and unique human characteristics, and investigating developmental patterns of growth. Experiences recommended were to include both hypothetical and laboratory situations. Methodologies were to emphasize small groups and individual study. "Area of specialization" included suggested areas of preparation such as planning individual studies, working with diagnostic instruments, learning the skills needed by independent study students, teaching independent study students, and doing independent study. Again, experiences were emphasized in both the theoretical and practical domains. Teaching internships in schools having operational independent study plans, and independent study by teacher trainees were offered as valuable pre-service training experiences.

CHAPTER VII

A PROPOSED PREPARATORY PROGRAM FOR TEACHERS OF INDEPENDENT STUDY STUDENTS

If one of the objectives of the secondary school is to develop and encourage learning to learn on one's own, then teachers need to be cognizant of organizational and methodological approaches that foster and facilitate such an ideal. Generally, the teachers observed in today's secondary schools that are attempting to direct student studies of an independent nature do foster such an ideal. Unlike the image many hold of the traditional teacher as a "teller" and "tester," these independent study teachers are attempting to act in such a way as to be guides, resources, and in a real sense facilitators of individualized programs of study. They seem to place trust in the ability of students to act in responsible ways and to believe that students given the opportunity to work apart from constant supervision will, indeed, profitably pursue individually charted plans of study. Independent study teachers, then, act in functional patterns in individualizing instruction, whereas the traditional classroom teacher has tended often to mouth the phrase but never proceed beyond its acceptance as a philosophically desirable goal. Unlike traditional teachers bounded by four walls of a classroom and the two covers of a textbook, the independent study teachers seem to accept the limits of an individual's capabilities

as the bounds of any learning situation. Resources are limited only by the degree of vividness of imagination and ingenuity. This author believes that if the secondary schools of today and tomorrow are to be able to more effectively realize the goal of increased ability and desire in students to continue learning after formal schooling has ended that additional numbers of this "new breed" are essential.

Secondary school teachers interested in directing independent study students can pursue one of several courses of action to prepare themselves for such an educational effort including trial-and-error on the job experience; experience in clinics and workshops organized to provide instruction and guidance in facilitating independent study; and preparatory program experiences designed with present independent study practices as foci. This chapter attempts to explicate the course of action designated as "preparatory program experiences."

When school systems, teacher preparatory institutions, and individuals recognize that the responsibilities of independent study teachers (see Chapter V) can be more adequately fulfilled as a result of carefully selected pre-service experiences (Chapter VI), some questions arise as to when, where, and how these experiences can be assimilated. The following model of a preparatory program for pre-service teachers of independent students is an attempt to deal with these questions. The model has not been rigidly detailed to allow for local applications in various pre- and in-service planning situations.

Dimensions of the Model

The model describes preparatory experiences in five major realms. General Education (the lower division studies required by

the college) is considered as the foundation of the program and is thought of as two years in which students explore the humanities, world civilizations, great literature, fundamental concepts in mathematics and the sciences, and so forth. The academic sequence is considered to be experiences undertaken in a major field or Area of Specialization. Regardless of the discipline chosen as the major area of specialization, sufficient breadth and depth should be achieved to allow successful teaching of the specialty to secondary school students. Electives and Related Fields are grouped as a sequence for convenience to aid the reader in separating these studies from studies in the area of specialization. The Independent Study sequence, although an integral factor in both academic and professional sequences, is considered a vital portion of the training experiences and therefore is separately detailed. Experiences in the Professional sequence are integrated, whenever appropriate, with the other sequences.

Basically, the program is to be thought of as a three-year training sequence, preceded by two years of thorough lower division studies in general education. After successful completion participants will receive a master's degree, such as the master of education or the master of arts in teaching. However, the possibility of a four-year bachelor's degree program is not excluded.

The following year-by-year description is not concerned with credits--examples are given in segments of time. Major emphasis is intended on the placement of appropriate experiences in the most propitious time in the total program. The arrangement of professional

and academic preparation is envisioned as enabling the student to tie together what, in the past, has often seemed to be two worlds at odds with one another.

Unlike traditional teacher-preparatory programs there is continued emphasis: on independent study as a teaching and learning device; on academicians teaching,using the methods participants need to learn and educators using content from students' areas of specialization to demonstrate methodology; on internships with directed experience in the guidance of secondary school students that are actively engaged in independent study; and on extension of the preparatory period to give a fifth-year degree and experiential rating.

First Two College Years

In this model, the first two years consist of the lower division studies in general education. Participants in the independent study training program can expect to pursue a broad range of offerings in the liberal arts during these two years. World cultures, the humanities, (literature, art, music), mathematics, science, and world civilizations are exemplary areas of investigation. There should be the opportunity for students to investigate independent studies or topics under the direction of academicians who teach using independent study as a part of their methodology.

Third Year in College

At this time students would elect to prepare themselves to direct students doing independent studies as well as to teach regular classes in the secondary school. These trainees would enter into a three-year sequence of courses designed to provide useful and needed preparatory experiences. Participants could include all students

preparing for secondary school teaching responsibilities. It is the author's opinion that all secondary teachers need a minimum amount of experience in facilitating independent study; thus, the program model is devised so that all students can be accommodated--those students expecting to devote themselves primarily to independent study teaching would be expected to elect additional independent studies, while those students interested in typical classroom teaching stations might elect a modified program with fewer independent studies.

The first two quarters of the third year would be very similar. Students would spend nearly two-thirds of their time in their area of specialization, participating in seminars or laboratories and large group presentations. Nearly one-third of the time would be spent on an individual independent study growing out of the seminars and lectures. Approximately one-sixteenth of the time would be spent in the professional sequence.

In the area of specialization it would be expected that each student be enrolled in two or three basic courses each term. Approximately three hours each day would be spent in intensive study under a team including academicians and a consulting educator. Presentations would be made, examinations given, and papers written and evaluated within the accepted realm of professional freedom. However, the team of professionals would work together on planned occasions. Methodology would be discussed, concepts taught to the students would be identified and listed for other team members, and comments on student progress could be shared. In history, for example, there could be studies or courses in the European, Eastern, African, American, and Latin American areas. Each student would study two or three of these

areas or two or three parts of an area, such as French and Polish histories within the European area.

The same team of professors would serve to coordinate the independent studies with additional help available from research-oriented colleagues. At this time students would be introduced systematically to the general methodology of independent study--for example, how to identify, attack, and solve problems. (See pp. 180-181 for additional topics.) Students would do an individual depth study of some topic under the direction of one of these professors, would meet approximately one hour per week to discuss problems and progress, and on occasion would meet in small groups with other participants doing similar studies. Students would learn how to assist secondary students in the planning of studies; how to conduct studies; how to evaluate results; and how to work in one-to-one and small group situations. Directed experience in the teaching of learning skills, library skills, and research techniques such as the interview should be incorporated into these independent study segments of the preparatory program.

In the professional sequence, a small portion of the time during these two quarters, there could be an examination of the role of a particular area of specialization in the history of education in the first quarter. For example, the mathematics major would investigate the development and influence of mathematics in the secondary curriculum, perhaps since the Colonial Period. In the second quarter an investigation of applications of pragmatism and the decision-making process in education could be conducted.

The third quarter would be split into three segments, all of which may be considered within the professional sequence. The

first two weeks, approximately five hours per day would be spent in large and small groups studying adolescents and their behavior, common and unique characteristics, and specifics of planning and evaluating. The next four weeks would be spent in a practicum, with the student participant working under a teacher who has regular teaching responsibilities and also directs independent studies of secondary students. The participants' major responsibilities would be to work in one-to-one and small group situations with secondary students, therefore, more than one participant may be assigned to a given teacher. All directing teachers would have participated in a summer training program the preceding summer and would be given an honorarium for directing these participants in the various learning activities. Following the four-week practicum would be another four-week period back on campus for intensive investigation of methodology. Video tapes made during the practicum and in laboratory settings would provide opportunities for critiques and analyses of teaching acts. Presentations on topics deemed essential could be included.

Fourth Year in College

During the first quarter the program for participants would be similar to that in the previous year in the distribution of time. However, the academic sequence of approximately two-thirds of the time would feature a closer relationship with the professional sequence. Approximately three hours per day would find students engaged in their specialization studies, lectures, and small groups. Each afternoon for one additional hour students would meet with a team featuring administrative, curricula, foundations, and

personnel services competencies. Participants and the team would consider the concepts, skills, attitudes, and understandings identified from student specialization studies. Special attention would be given to the usefulness of these in directing learning activities of secondary school students. Applications of principles from each realm of education represented in the team would be considered. The independent study would continue as in the third year. The professional sequence would provide for an examination of socio-economic influences in secondary education.

The second quarter would free participants from specializations studies and allow for electives outside the major field (ten-sixteenths of the time). Independent study would require three-sixteenths of the time. Independent study in this term would be a research project involving statistical procedures and the professional sequence portion of the program would be designed with that in mind. Basic statistical methodology would be examined in the professional sequence with special attention given to interpretation of data and reporting findings.

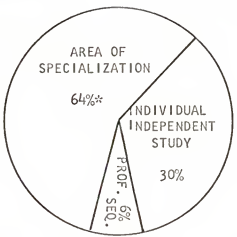
The third term would allow splitting the academic sequence between major field specialization and electives, with independent study continuing as three-sixteenths of the time and the professional sequence as three-sixteenths of the time. Independent study in this term would be in some phase of human development and behavior. At this time developmental patterns of cognitive, affective, and physical growth should be investigated individually in some depth. The professional sequence would emphasize student-oriented curriculum development; thus, applications of planning, directing, and evaluating skills should prove feasible.

Fifth Year in College

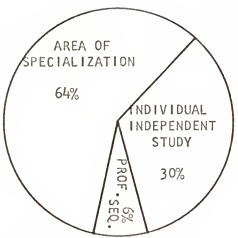
Internship in a school having a formal independent study program would be the full-time activity of the entire first term. Participants would function in approved systems under directing teachers who have been trained, through summer clinics or workshops, in how to direct independent study interns. Teachers would receive an honorarium and interns would be paid, perhaps one-half beginning salary. Travel to and observation in other schools having independent study would be encouraged. Additional supervision of the intern would be provided by personnel from the training institution, preferably from both the academic and professional sequence.

Second term would be largely professional sequence with three-sixteenths of the time spent investigating and comparing the various philosophies and their applications in education, three-sixteenths of the time spent in clinical and laboratory examinations of human development, and ten-sixteenths of the time assigned for participants' study and experience in the world of skills. Instruction would focus on those skills needed by teachers in directing independent studies and by secondary school students in executing the studies. Simulated teaching stations and settings could be useful.

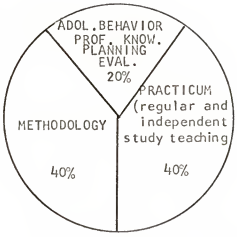
The last term in the program is divided so that ten-sixteenths of the time students would be studying in related fields or electives, three-sixteenths of the time students would be pursuing an independent investigation of some topic, and three-sixteenths of the time participants would be gaining knowledge and experience in evaluating student efforts and abilities, independent study programs, and process and product in the professional sequence.



First Quarter



Second Quarter

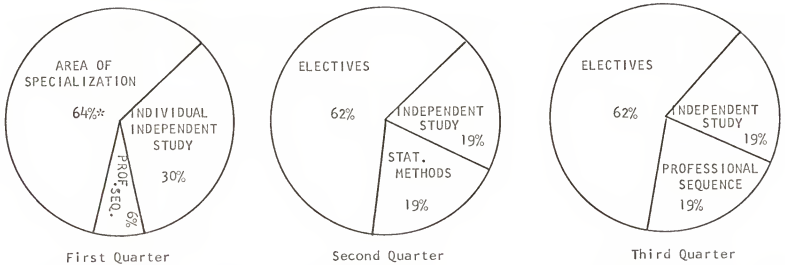


Third Quarter
(Professional Sequence)

*Percentages represent approximate time spent in each area of study.

FIGURE 1

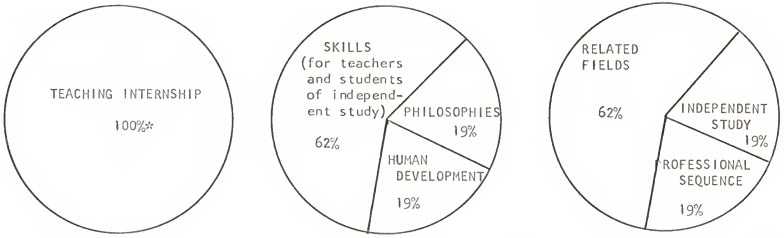
PREPARATORY PROGRAM: THIRD YEAR



*Percentages represent approximate time spent in each area of study.

FIGURE 2

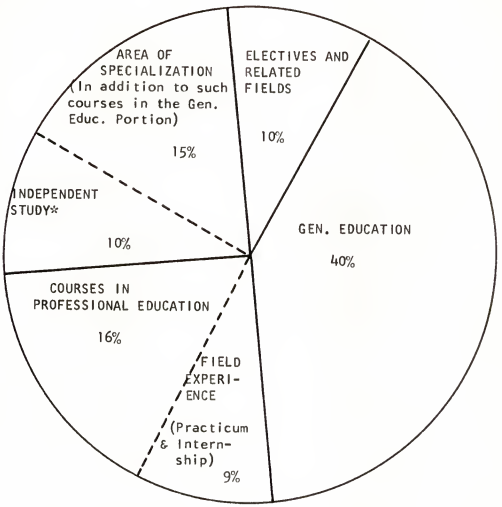
PREPARATORY PROGRAM: FOURTH YEAR



*Percentages represent approximate time spent in each area of study (except first quarter).

FIGURE 3

PREPARATORY PROGRAM: FIFTH YEAR



* It is expected that the Independent Study Segment of the program will emphasize studies in the Area of Specialization.

FIGURE 4

APPROXIMATE DISTRIBUTION OF TIME IN FIVE AREAS OF STUDY FOR FIVE-YEAR PROGRAM

The Finished Product

Participants trained in such a preparatory program should develop many of the competencies enumerated as needed (Chapter IV) by the director of secondary school independent study students. Experiences planned in each sequence should contribute to the development of teachers competent in content areas of specialization, in directing student independent studies from planning stages to completion, and in understanding the potentialities of secondary school students to act responsibly in independent situations.

CHAPTER VIII

SUMMARY OF FINDINGS AND IMPLICATIONS FOR RESEARCH

Nine questions for study were phrased in Chapter I. This study has focused on these questions as data were analyzed and discussed and as competencies and pre-service experiences were described. The questions are restated here for convenience in reading; related findings are considered. Then, implications for further research are presented as the concluding section of this chapter and this study.

Findings Related to Questions for Study

Question 1

What do practitioners think should be the responsibilities in curriculum planning, selection and assignment of students, and instructional activities for secondary teachers working with independent study students?

Fifty of the 55 items in Part I of the opinionnaire were considered to be either "needed" or "mandatory" competencies (Table 4). Agreement on the basic importance of such a large number of the items should be an indication that the subject population (1) considered the responsibilities listed to be those they are at this time performing or (2) recognized that independent study programs do demand these types of activities, regardless of present practices. Additional

comments were secured through open-ended responses but these responsibilities have not yet been tested for a sample of independent study teachers (see pp. 139-142).

The opinionnaire items judged either "mandatory" or "needed" in Section A, "Responsibilities of Teachers of Independent Study Students," were:

1. Developing purposes and objectivies of an independent study program.

2. Selecting content of an independent study program in terms of attitudes, interests and abilities.

3. Preparing a course of study, course outline or syllabus of an independent study program.

4. Developing criteria or scales to evaluate student progress in independent study.

5. Interpreting the program of independent study to other faculty members.

6. Helping other teachers learn the responsibilities of teaching independent study students.

7. Surveying materials, equipment and spaces for independent study as to availability and usefulness.

8. Surveying community resources to determine usable and available ones for an independent study program.

9. Informing parents of all students about an independent study program.

10. Informing citizens in general about an independent study program.

11. Interpreting the independent study program to parents of independent study students.

12. Planning facilities, materials and services needed for independent study.

13. Estimating costs of facilities, materials and services needed for independent study.

14. Selecting facilities, materials and services needed for independent study.

15. Assisting students in selecting courses in which they would be doing independent study work.

16. Planning and participating in evaluating the independent study program (opinion polls, etc.).

17. Planning independent learning activities in terms of students' attitudes, interests and abilities.

The opinionnaire items judged either "mandatory" or "needed" in Section B, "Selection and Assignment of Independent Study Students," were:

2. Analyzing and interpreting results of tests given to independent study students.

3. Using teacher recommendations in selecting and admitting students to an independent study program.

4. Establishing prerequisites for admission to independent study.

5. Checking student cumulative folders prior to admission decisions.

7. Evaluating proposed plans or contracts of independent study students (statement of the problem to be studied and procedures to be used).

8. Making final decisions concerning admission to independent study programs.

9. Nominating students for an independent study program.

10. Making decisions as to the duration of the student's independent study.

11. Counseling students as to the advisability of participation in an independent study program.

The opinionnaire items judged either "mandatory" or "needed" in Section C, "Instructional Activities of Teachers of Independent Study Students," were:

1. Teaching learning procedures appropriate to proposed independent study projects.

2. Teaching library skills to independent study students.

3. Teaching students to budget their time for independent study.

4. Teaching independent study students to use interview techniques.

5. Teaching independent study students to write plans or proposals for independent study projects.

7. Teaching independent study students to discriminate among goals and activities.

8. Teaching independent study students to discriminate among materials and approaches.

9. Offering special teacher help to independent study students when needed.

10. Teaching independent study students to recognize and respect the differing contributions of individuals.

11. Allowing students to do things in their own way (providing for trial-and-error experiences).

12. Encouraging independent study students to try new ways of doing things.

13. Arranging for students of similar interests and abilities to work together.

14. Guiding discussion of small groups of independent study students.

15. Developing student responsibility for self-evaluation by requiring periodic written student-progress reports.

16. Evaluating student progress through products of independent study work.

17. Using oral examinations of independent study students for purposes of evaluation.

18. Assigning independent study student grades based on evaluation of process and product.

19. Providing conference time for independent study students when needed.

20. Using student-teacher conferences as progress checks.

21. Promoting initiative and self-direction by minimizing direct supervision.

22. Arranging facilities and equipment in the classroom for independent study.

23. Planning for independent study experiences during the school day outside the school facilities.

24. Keeping records other than those ordinarily kept by a classroom teacher.

25. Providing vocational information in the independent study student's area of study.

Five of the 55 items in Part I of the opinionnaire were judged by teachers with mean ratings in the "of some value" range. These were not rejected as responsibilities; however, they were seen by the teachers as secondary concerns. It seems clear that items 15 and 19 in Section A, items 1 and 6 in Section B, and item 6 in Section C could be considered to be outside the instructional domain and thus secondary in importance.

The opinionnaire items judged by teachers to be "of some value" in Section A, were:

15. Assisting students in selecting courses in which they would be doing independent study work.

19. Operating as a consultant on independent study to other schools.

The opinionnaire items judged by teachers to be "of some value" in Section B, were:

1. Administering diagnostic tests to prospective independent study students.

6. Developing and distributing application forms for independent study programs.

The opinionnaire item judged by teachers to be "of some value" in Section C, was:

6. Assisting independent study students in the preparation of papers for publication.

Question 2

What do practitioners think should be the components of the pre-service preparatory program for secondary teachers working with independent study students?

Practitioners judged 13 opinionnaire items of the 28 items in Part II to be "needed." Several possible explanations were explored in an attempt to interpret teachers' failure to rate additional items more strongly than they did. None were rated "mandatory," the other 15 having been judged to be "of some value." In brief, the reasons offered were: (1) Since the teachers in the sample had not, according to their own reports, participated in such experiences they might construe the high rating of an opinionnaire item as a reflection on their abilities to direct independent studies. (2) It may be difficult for teachers to rate activities as "needed" when they have not been personally experienced. (3) There is the possibility that teachers feel acceptance of experiences as "needed" might entail further schooling for themselves--an idea which they might reject. (4) Since these teachers learned by on-the-job trial-and-error, they may have felt that no formal experience would be necessary.

The items rated as "needed" in Part II, "preparatory Experiences for the Teachers of Independent Study Students," were:

2. Experimentation with independent study in own classroom.

3. Additional work in the subject matter involved.

4. Visitation to a similar experimental program in the school system.

5. Visitation to a similar experimental program in the school.

6. Visitation to a similar experimental program in another school system.

10. Specific study and training in counseling independent study students.

11. Group conferences with other teachers of independent study students.

14. Research experiences via independent, individual study.

19. Methods course emphasizing independent study as an instructional approach.

20. Participation in a school's development of an independent study program.

21. Participation in special institutes encouraging independent study on the part of members of the institute (such as NSF and NDEA summer or year-long institutes).

23. Participation in and/or direction of seminars emphasizing independent projects.

24. Study and/or experience in working with small groups (e.g., groups of 12 or less).

The items in Part II rated as "of some value" were:

1. Participation in a similar independent study program as a student.

7. Teaching experience in a school which used flexible scheduling.

8. Teaching experience in a school which was non-graded.

9. Teaching experience in a school which used team teaching.

12. Using of experimental materials in national curriculum projects (SMSG, BSCS, etc.).

13. Research experiences as a graduate student.

15. Work in a tutorial, one-to-one, student-teacher relationship.

16. Special preparation for the teaching of reading.

17. Internship in a teaching situation using independent study instruction.

18. Course work or practicum in teaching exceptional children.

22. Formal instruction in library-research skills.

25. Experience in preparing reports of independent study.

26. Experience in evaluating reports of independent study prepared by other educators.

27. Writing theses required in graduate work.

28. Participation in research studies requiring the use of statistics.

Question 3

Do teachers and administrators show significant differences of opinion on listed responsibilities?

Significant difference at the .05 and .01 levels was established between teachers' and administrators' mean ratings on 12 opinionnaire items in Part I (Table 71). However, it is evident that the differences are intrarange as well as interrange, and the statistical significance can be considered as a difference of degree rather than kind when the strength of the mean ratings is considered (see p.150).

Identifiable differences were the result of the administrator group consistently judging items in the opinionnaire somewhat more positively than teachers. Administrators, as revealed in the mean ratings, may be somewhat more sensitive to the requirements of independent study. Although both teachers and administrators favor these responsibilities, higher mean ratings by administrators may be the result of different points of view associated with differences in staff position. The administrator, unlike the independent study teacher, may well be more aware of (a) the need for a good public image of the school, (b) the evident innovative character of the curricular program, (c) the noticeable up-to-date attributes of instructional practices, and one's personal esteem derived from an

association with a forward-looking school. Overall, the administrator may well focus on the following: (a) that his school reflect his superior abilities as an educational leader, (b) that he is in charge of an educational enterprise that corresponds to contemporary descriptions and theoretical models of instructional excellence, and (c) that, consequently, he is respected by his administrator peers.

The agreement on 43 of the 55 items in Part I may well be the result of certain character traits held in common by independent study teachers and their administrators. There has been no attempt to identify nor to examine these traits; if there should be such traits, common to independent study personnel, hopefully later study will give helpful insights. In addition, there is the possibility that the high degree of agreement could be the result of both group's involvement in what is considered to be an experimental program in their schools, with both desiring to see it succeed and expand.

Question 4

Do teachers and administrators show significant differences of opinion on listed preparatory experiences?

Six items in Part II were identified as having significant differences at .05 or .01 levels between teachers and administrators (Table 71). These pre-service experiences were:

3. Additional work in the subject matter involved.

10. Specific study and training in counseling independent study students.

22. Formal instruction in library-research skills.

23. Participation in and/or direction of seminars emphasizing independent study.

25. Experience in preparing reports of independent study.

26. Experience in evaluating reports of independent study prepared by other educators.

Any discussion on these findings would have to involve a combination of reasons explicated for Question 2 and Question 3. There was agreement for 20 of the 28 items, whether they were rated "of some value" or "needed." Reasons for the absence of more "needed" ratings were presented on page 177. Possible explanations for differences were examined on page 177.

Question 5

Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the types of programs in which they teach?

There was relatively strong agreement among groups of teachers regardless of the type of program in which they taught (pp. 96-99). Although F ratios were sufficiently large on 19 of the 83 opinionnaire items to demonstrate significant difference among the independent study rater types at .05 and .01 levels, Tables 34-52 revealed that differences most often were between the work experience subjects and other groups (see pp. 151-152). On some items the differences were not so important when the strength of all groups' ratings was considered (see pp. 96- 99).

Differences between skill groups and academic groups may well be the result of (a) the opinionnaire items, which tend to focus on academic subject activities more than on skill subject activities, and (b) the educational training and experiential background of the two groups of teachers, which may differ in practical and theoretical orientations.

Agreement on items may indicate that many responsibilities and pre-service experiences are seen as applicable regardless of the subject orientation of respondents.

Question 6

Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the department in which they teach?

Teachers, when categorized by broad fields, significantly disagreed at .05 and .01 levels on 16 of the 83 opinionnaire items (Table 71). There was no disagreement on 67 of the items. The disagreements were minor in terms of strength of ratings and the fact that no one teacher group consistently was pitted against other groups. The skilled groups (vocational and fine arts) came closest to consistent disagreement with the other four groups.

The reasons for differences and agreements may well be similar to those stated in the preceding discussion for question 5.

Question 7

Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the number of years of teaching experience?

There were no evident differences of opinion that could be attributed to the number of years of teaching experience. Inspection of means as categorized by Table 33 demonstrated that any differences were negligible, thus quite possibly indicating that independent study teachers are a breed in themselves, that is, that teachers may have similar ways of viewing education regardless of years of experience.

Characteristics of independent study teachers such as flexibility, interest in educational innovations, adaptability, and positive attitudes toward change may well be factors causing teachers to view items the same regardless of the number of years in active teaching.

Question 8

Are there differences in expressed beliefs concerning responsibilities and needed pre-service experiences of teachers of independent study students that can be identified and attributed to the number of years of teaching experience in independent study programs?

There were no outstanding differences of opinion that could be attributed to the number of years teachers had directed independent studies. Categories in Table 3 were investigated--means were inspected--and no obvious discrepancies were apparent in what teachers select as significant responsibilities and pre-service experiences.

The fact that most teachers had only 1, 2, or 3 years' experience in directing independent studies may well be the underlying factor that prevents differences. However, as in the Question 7 discussion the author feels the reason lies more in the basic attitudes and characteristics of teachers who are willing to be independent study teachers.

Question 9

What model preparatory program would be feasible based on these findings?

See Chapter VII for a full discussion of the proposed preparatory program.

Implications for Further Research

Nine implications are suggested. In an attempt to provide a clearer focus for the reader these implications are arranged into (1) refinements for future use of this particular design, (2) additional questions suggested by the study, and (3) practical applications of the findings.

Refinements

Implication one involves the use of factor analysis as a technique of data analysis. As utilized in this study it served only to confirm the researcher's own efforts at dimensioning. It became evident that the researcher identifies the themes or dimensions represented in the items regardless of the technique of data analysis. Additional studies might include the identification of dimensions within the data-collection instrumentation by the individual researcher and by a panel of judges prior to factor analysis. Then, after factor analyzing the data a third effort at dimensioning the items could be attempted by yet another panel of judges with correlation studies attempted on the three sets of dimensions. If the results indicate that there is strong correlation among the sets of dimensions then more confidence can be placed in any dimension identified by such a study as this.

Implication two concerns reported teacher characteristics. Future studies attempting to identify characteristic responsibilities of independent study teachers might examine actual teacher behaviors in teacher-student work relationships. The characteristics identified as "needed" and "mandatory" in this study could be reconstructed in the format of a checklist. Judges could be trained and asked to observe

actual independent study teacher-student interaction patterns. Results should either support or deny responsibilities in terms of actual usage by independent study teachers.

Implication three is the result of the disparity of ratings between items of responsibility in Part I of the opinionnaire and items of preparatory experiences in Part II of the opinionnaire. Future studies might profit by an examination of the suggested explanation for this phenomenon of ratings (pp. 177-178). Examination of independent study teachers could provide evidence of the degree to which (a) teachers in the sample construe high ratings of opinionnaire item as reflection of their ability to be successful in working with independent study students; (b) rating activities as "needed" proves difficult because the teachers have not been involved in certain experiences; (c) rating of experiences as "needed" would be indicators of further schooling for themselves--an idea which they might reject; (d) independent study teachers learn by on-the-job trial-and-error so that they consider formal experience as unnecessary.

Implication four is that independent study teachers might be more effectively studied in a few schools with comprehensive independent study programs. In a future study, rather than attempt to study a random sample, intensive observation and data collection might focus on a limited number of programs nominated or in some manner identified as outstanding. Programs such as those at Shoreline High School, Cocoa Beach High School, and the University of Chicago Laboratory High School (Appendix B, p. 231) could be visited, teachers interviewed and observed, and students shadowed as they go about their activities.

Additional Questions

Implication five deals with the attitudes or mind-sets characteristic of independent study teachers. Does the independent study teacher have characteristic attitudes toward students and teaching that differ from those of non-participating teachers? Studies on such a question are suggested by the similarity of mean rating regardless of the number of years of teaching experience. Such studies might involve comparisons of data such as mean ratings on opinionnaire items for independent study teachers and non-participating teachers. Additional approaches might include the identification by trained observers of predominant attitudes, comparisons of student ratings for matched groups of independent study teachers and non-participating teachers, and the administration of selected commercially marketed psychological tests with comparisons attempted for the two groups of teachers.

Implication six concerns the competency of independent study teachers. There are teachers directing independent studies in sufficient numbers to make feasible investigations of teacher efficiency, influence, and competency. Teachers could be identified as outstanding through some nomination procedure with sample selections made from the nominated group. Observations and interviews with the selected sample should give additional direction and information which might subsequently lead to the development of competency scales.

Implication seven involves the extent to which independent study affiliations in a teacher's schedule influence methodological considerations and effectiveness in regular classes need to be examined. Further research could focus on determining (a) whether a teacher can act effectively in directing independent study when

categorized as very authoritarian, democratic, or laissez faire in his teaching practices; (b) whether one of these philosophical orientations is more or less conducive to regular classroom teaching than to facilitating independent study; (c) whether teachers become more facilitating in regular classes as a result of having directed independent study students.

Practical Applications

Implication eight suggests preparatory experiences could be promoted through pre- and in-service activities--clinics, summer institutes, workshops, part of the regular college teacher training program and so forth. It should be possible to assess the value of such efforts by doing follow-up studies on participants, by making controlled observations of participants and non-participants, and by evaluating the impact of participants on existent programs. The influences of feedback on curricula changes should be included in such an assessment.

Implication nine suggests that in order to more effectively prepare teachers to direct independent study in secondary schools a model for pre-service training of independent study teachers should provide certain needed experiences. The ascertainment of increased teacher effectiveness would require studies of teacher performance in the secondary schools. Three types of studies might be helpful. (a) Matched groups of teachers from the model program and a traditional program could be observed by trained raters using techniques such as interactional analysis. (b) Additional comparisons should be possible drawing random samples from graduates of the two types of teacher preparation programs. Variables such as grade point averages,

subject majors, sex, and number of independent studies directed could be held constant. Interactional analysis by trained observers and student ratings of teacher performance, could prove useful in evaluating graduates of the model program. (c) Studies of student performance both in school and after graduation could use random samples of independent study students and matching control groups of students not participating in independent study to identify skills, competences, and knowledges gained under the different groups of teachers.

APPENDICES

APPENDIX A

TEACHERS OF INDEPENDENT STUDY STUDENTS:

RESPONSIBILITIES AND PREPARATION

School _____

Date _____

Department _____

Number of years teaching experience _____

Number of years teaching experience in independent study _____

Type of Program in which you teach--circle one of the numbers below according to the descriptions given on the last page of this questionnaire:
1 2 3 4 5 6 7 8 9 10

I. RESPONSIBILITIES OF TEACHERS OF INDEPENDENT STUDY STUDENTS

Think in terms of an independent study program as it should be. Please rate the following responsibilities according to their importance to teachers of independent study students by circling the number which best represents your beliefs, as follows:

(0)----------(1)----------(2)----------(3)
Of No Value Of Some Value Needed Mandatory

EXAMPLE:

0 1 2 3 Keeping abreast of the recent developments in education by reading articles in professional journals

In this illustration, the 3 has been circles to indicate that this item is considered as a "must" to the teacher of independent study students.

A. CURRICULUM PLANNING FOR INDEPENDENT STUDY PROGRAMS

0 1 2 3 (1) Developing purposes and objectives of an independent study program

0 1 2 3 (2) Selecting content of an independent study program in terms of attitudes, interests, and abilities

Section A

Comtinue to follow directions on page 1

(0)----------(1)----------(2)----------(3)					
Of No Value					Of Some Value Needed Mandatory
0	1	2	3	(3)	Preparing a course of study, course outline, or syllabus of an independent study program
0	1	2	3	(4)	Developing criteria or scales to evaluate student progress in independent study
0	1	2	3	(5)	Interpreting the program of independent study to other faculty members
0	1	2	3	(6)	Helping other teachers learn the responsibilities of teaching independent study students
0	1	2	3	(7)	Surveying materials, equipment and spaces for independent study as to availability and usefulness
0	1	2	3	(8)	Surveying community resources to determine usable and available ones for an independent study program
0	1	2	3	(9)	Informing parents of all students about an independent study program
0	1	2	3	(10)	Informing citizens in general about an independent study program
0	1	2	3	(11)	Interpreting the independent study program to parents of independent study students
0	1	2	3	(12)	Planning facilities, materials and services needed for independent study
0	1	2	3	(13)	Estimating costs of facilities, materials and services needed for independent study
0	1	2	3	(14)	Selecting facilities, materials and services needed for independent study
0	1	2	3	(15)	Assisting students in selecting courses in which they would be doing independent study work
0	1	2	3	(16)	Planning and participating in evaluating the independent study program (opinion polls, etc.)
0	1	2	3	(17)	Planning independent-learning activities in terms of students' attitudes, interests, and abilities

Section A

Continue to follow directions on page 1

(0) Of No Value	(1) Of Some Value	(2) Needed	(3) Mandatory	
0	1	2	3	(18) Preparing written descriptions of the independent study program for distribution to the public
0	1	2	3	(19) Operating as a consultant on independent study to other schools

B. SELECTION AND ASSIGNMENT OF INDEPENDENT STUDY STUDENTS

0	1	2	3	(1) Administering diagnostic tests to prospective independent study students
0	1	2	3	(2) Analyzing and interpreting results of tests given to independent study students
0	1	2	3	(3) Using teacher recommendations in selecting and admitting students to an independent study program
0	1	2	3	(4) Establishing prerequisites for admission to independent study
0	1	2	3	(5) Checking student cumulative folders prior to admission decisions
0	1	2	3	(6) Developing and distributing application forms for independent study programs
0	1	2	3	(7) Evaluating proposed plans or contracts of independent study students (statement of the problem to be studied and procedures to be used)
0	1	2	3	(8) Making final decisions concerning admission to independent study programs
0	1	2	3	(9) Nominating students for an independent study program
0	1	2	3	(10) Making decisions as to the duration of the student's independent study
0	1	2	3	(11) Counseling students as to the advisability of participation in an independent study program

Continue to follow directions on page 1

(0) Of No Value	(1) Of Some Value	(2) Needed	(3) Mandatory

C. INSTRUCTIONAL ACTIVITIES OF TEACHERS OF INDEPENDENT STUDY STUDENTS

0	1	2	3	(1)	Teaching learning procedures appropriate to proposed independent study projects
0	1	2	3	(2)	Teaching library skills to independent study students
0	1	2	3	(3)	Teaching students to budget their time for independent study
0	1	2	3	(4)	Teaching independent study students to use interview techniques
0	1	2	3	(5)	Teaching independent study students to write plans or proposals for independent study projects
0	1	2	3	(6)	Assisting independent study students in the preparation of papers for publication
0	1	2	3	(7)	Teaching independent study students to discriminate among goals and activities
0	1	2	3	(8)	Teaching independent study students to discriminate among materials and approaches
0	1	2	3	(9)	Offering special teacher help to independent study students when needed
0	1	2	3	(10)	Teaching independent study students to recognize and respect the differing contributions of individuals
0	1	2	3	(11)	Allowing students to do things in their own way (providing for trial-and-error experiences)
0	1	2	3	(12)	Encouraging independent study students to try new ways of doing things
0	1	2	3	(13)	Arranging for students of similar interests and abilities to work together
0	1	2	3	(14)	Guiding discussions of small groups of independent study students
0	1	2	3	(15)	Developing student responsibility for self-evaluation by requiring periodic written student-progress reports

Section C

Continue to follow directions on page 1

(0) Of No Value					(1) Of Some Value	(2) Needed	(3) Mandatory
0	1	2	3	(16)	Evaluating student progress through products of independent study work		
0	1	2	3	(17)	Using oral examination of independent study students for purposes of evaluation		
0	1	2	3	(18)	Assigning independent study student grades based on evaluation of process and product		
0	1	2	3	(19)	Providing conference time for independent study students when needed		
0	1	2	3	(20)	Using student-teacher conferences as progress checks		
0	1	2	3	(21)	Promoting initiative and self-direction by minimizing direct supervision		
0	1	2	3	(22)	Arranging facilities and equipment in the classroom for independent study		
0	1	2	3	(23)	Planning for independent study experiences during the school day outside the school facilities		
0	1	2	3	(24)	Keeping records other than those ordinarily kept by a classroom teacher		
0	1	2	3	(25)	Providing vocational information in the independent study student's area of study		

II. PREPARATORY EXPERIENCES FOR THE TEACHERS OF INDEPENDENT STUDY STUDENTS

Think of a program of preparatory experiences for teachers of independent study students as it should be. Please rate the following preparation experiences according to their importance to teachers of independent study students by circling the number which best represents your beliefs, as follows:

(0) Of No Value					(1) Of Some Value	(2) Needed	(3) Mandatory
0	1	2	3	(1)	Participation in a similar independent study program as a student		
0	1	2	3	(2)	Experimentation with independent study in own classroom		
0	1	2	3	(3)	Additional work in the subject matter involved		
0	1	2	3	(4)	Visitation to a similar experimental program in the school system		
0	1	2	3	(5)	Visitation to a similar experimental program in the school		
0	1	2	3	(6)	Visitation to a similar experimental program in another school system		
0	1	2	3	(7)	Teaching experience in a school which used flexible scheduling		
0	1	2	3	(8)	Teaching experience in a school which was non-graded		
0	1	2	3	(9)	Teaching experience in a school which used team teaching		
0	1	2	3	(10)	Specific study and training in counseling independent study students		
0	1	2	3	(11)	Group conferences with other teachers of independent study students		
0	1	2	3	(12)	Use of experimental materials in national curriculum projects (SMSG, BSCS, etc.)		
0	1	2	3	(13)	Research experiences as a graduate assistant		
0	1	2	3	(14)	Research experiences via independent, individual study		
0	1	2	3	(15)	Work in a tutorial, one-to-one, student-teacher relationship		

Part II

Continue to follow directions on page 1

	(0) Of No Value	(1) Of Some Value	(2) Needed	(3) Mandatory	
0	1	2	3	(16)	Special preparation for the teaching of reading
0	1	2	3	(17)	Internship in a teaching situation using independent study instruction
0	1	2	3	(18)	Course work or practicum in teaching exceptional children
0	1	2	3	(19)	Methods course emphasizing independent study as an instructional approach
0	1	2	3	(20)	Participation in a school's development of an independent study program
0	1	2	3	(21)	Participation in special institutes encouraging independent study on the part of members of the institute (such as NSF and NDEA summer or year-long institutes)
0	1	2	3	(22)	Formal instruction in library-research skills
0	1	2	3	(23)	Participation in and/or direction of seminars emphasizing independent projects
0	1	2	3	(24)	Study and/or experience in working with small groups (e.g., groups of 12 or less)
0	1	2	3	(25)	Experience in preparing reports of independent study
0	1	2	3	(26)	Experience in evaluating reports of independent study prepared by other educators
0	1	2	3	(27)	Writing theses required in graduate work
0	1	2	3	(28)	Participation in research studies requiring the use of statistics

TEN TYPES OF INDEPENDENT STUDY PROGRAMS IN SECONDARY SCHOOLS*

1. Some released time given from a regular class so that some students may work independently on individually planned studies in addition to class assignments.

2. Some released time given from a regular class so that some students may work independently on individually planned studies in lieu of class assignments.

3. Seminar groups which are smaller than ordinary classes in which students work independently, at least part of the time, on common or individual topics, units, or problems.

4. Individually planned program of curricular study with regularly scheduled time to study independently, in or out of school, with a minimum of teacher direction and supervision.

5. Independent study as part of a program of instruction organized around large- and small-group instruction.

6. Individual extra-curricular enrichment study with students working independently before or after school, or on weekends (school facilities open mornings, nights, or weekends).

7. Vocational or work experience programs of instruction in which students work independently, in or out of school, so that they will develop salable skills.

8. A curricular program which emphasizes the development of student responsibility in regard to the individual's use of regularly offered independent study time. Subsequently, one of the objectives of the school's instructional program is developing the independent, self-directed learner.

9. A regularly scheduled class in the school's instructional program which normally requires that students work independently (e.g. school publications, advanced courses in art, industrial arts, music, etc.) as individual members of a regular class.

10. A regularly scheduled class in the school's instructional program which provides all students with some independent study time in order to accomplish a long-term class assignment, required of all members of the class but which may be individually planned in terms of the specific topic or problem studied.

*As differentiated, defined, and compiled by James Douglas Wells
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APPENDIX B

TABLE 73

SUMMARY OF NUMBER OF OPINIONNAIRES MAILED AND RETURNED

School	Opinionnaires Mailed	Completed Opinionnaires Returned
A. C Flora	9	5,1[a]
Amphitheater	13	10,1
Andrew P. Hill	7	5,1
Basset	5	4,1
Beatrice	6	5,1
Benjamin Franklin	6	5,0
Camden	8	6,1 (-1)[b]
Chippewa Valley	14	7,0
Cocoa Beach	19	16,1
Coral Gables	4	3,1
Dalewood	6	4,1
Easton Junior	10	9,1
Evanston Township	22	17,1
Flint Central	8	5,1
George Wythe	7	6,1
Half Hollow Hills	10	8,2
John F. Kennedy	3	2,1
Lincoln	7	6,1
Littleton	4	3,1
Miami	6	4,2
Middletown	5	0,1
New Hampton	7	5,0 (-1)
Oak Glen	9	5,2
Salina	6	5,1
Shaker Heights	6	4,1
Shoreline	14	13,1
University of Chicago Lab School	12	7,1
University City	7	5,1
University	5	4,1
Valley	7	6,1
Vandermuelen	16	15,1
Victoria	14	13,1
Washington and Lee	5	4,1

TABLE 73--Continued

School	Opinionnaires Mailed	Completed Opinionnaires Returned
William Fleming	7	0,0
Wilmington	8	7,1 (-1)
Wisconsin Heights	10	8,1
Total	312	266

[a]First number represents opinionnaires returned by teachers, second number represents opinionnaires returned by administrators

[b]Indicated unusable opinionnaire

TABLE 74

LIST OF THE 35 COOPERATING SECONDARY SCHOOLS

School	City and State
A. C. Flora	Columbia, South Carolina
Amphitheater	Tuscon, Arizona
Andrew P. Hill	San Jose, California
Bassett	Bassett, California
Beatrice	Beatrice, Nebraska
Benjamin Franklin	New Orleans, Louisiana
Camden	Camden, South Carolina
Chippewa Valley	Mount Clemens, M chigan
Cocoa Beach	Cocoa Beach, Florida
Coral Gables	Coral Gables
Dalewood Junior	Chattanooga, Tennessee
Easton Junior	Easton, Pennsylvania
Evanston Township	Evanston, Illinois
Flint Central	Flint, Michigan
George Wythe	Richmond, Virginia
Half Hollow Hills	Huntington, New York
John F Kennedy	Silver Spring, Maryland
Lincoln	Stockton, California
Littleton	Littleton, Colorado
Miami	Miami, Florida
Middletown	Middletown, New York
New Hampton	New Hampton, New Hampshire
Oak Glen	New Cumberland, West Virginia
Salina	Salina, Kansas
Shaker Heights	Shaker Heights, Ohio
Shoreline	Seattle, Washington
University of Chicago Lab School	Chicago, Illinois
University City	University City, Missouri
University	Urbana, Illinois
Valley	Las Vegas, Nevada
Vandermuelen	Port Jefferson, New York
Victoria	Victoria, Texas
Washington and Lee	Arlington
Wilmington	Wilmington, Deleware
Wisconsin Heights	Mazomanie, Wisconsin

APPENDIX C

TABLE 75

FREQUENCY DISTRIBUTIONS, MEANS AND STANDARD DEVIATIONS

FOR ADMINISTRATORS, TEACHERS AND TOTAL POPULATION

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Section A:							
Item 1							
Administrators	34	0	1	3	30	2.853	0.436
Teachers	229	1	6	40	183	2.760	0.512
Total Group	263	1	7	43	212	2.772	0.503
Item 2							
Administrators	34	0	2	7	25	2.676	0.589
Teachers	229	3	14	67	145	2.546	0.671
Total Group	263	3	16	74	170	2.563	0.662
Item 3							
Administrators	34	1	7	10	16	2.206	0.880
Teachers	229	15	41	91	82	2.048	0.895
Total Group	263	16	48	101	98	2.068	0.893
Item 4							
Administrators	34	1	3	9	21	2.471	0.788
Teachers	229	4	21	89	115	2.376	0.725
Total Group	263	5	24	98	136	2.388	0.732

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 5							
Administrators	34	0	2	17	15	2.382	0.604
Teachers	229	4	51	128	46	1.943	0.702
Total Group	263	4	53	145	61	2.000	0.704
Item 6							
Administrators	34	0	4	18	12	2.235	0.654
Teachers	229	8	57	126	38	1.847	0.730
Total Group	263	8	61	144	50	1.897	0.732
Item 7							
Administrators	34	0	0	11	23	2.676	0.475
Teachers	229	1	10	83	135	2.537	0.603
Total Group	263	1	10	94	158	2.555	0.589
Item 8							
Administrators	34	0	3	21	10	2.206	0.592
Teachers	229	7	41	115	66	2.048	0.768
Total Group	263	7	44	136	76	2.068	0.748

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 9							
Administrators	34	1	6	13	14	2.176	0.834
Teachers	229	11	51	91	76	2.013	0.866
Total Group	263	12	57	104	90	2.034	0.862
Item 10							
Administrators	34	1	10	18	5	1.794	0.729
Teachers	229	12	92	97	28	1.616	0.767
Total Group	263	13	102	115	33	1.639	0.763
Item 11							
Administrators	34	0	1	11	22	2.618	0.551
Teachers	229	4	27	92	106	2.310	0.746
Total Group	263	4	28	103	128	2.350	0.731
Item 12							
Administrators	34	0	1	8	25	2.706	0.524
Teachers	229	0	6	61	162	2.681	0.520
Total Group	263	0	7	69	187	2.684	0.520

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 13							
Administrators	34	1	5	14	14	2.206	0.808
Teachers	229	6	36	100	87	2.170	0.785
Total Group	263	7	41	114	101	2.175	0.786
Item 14							
Administrators	34	0	0	13	21	2.618	0.493
Teachers	229	2	7	88	132	2.528	0.604
Total Group	263	2	7	101	153	2.540	0.590
Item 15							
Administrators	34	0	3	10	21	2.529	0.662
Teachers	229	12	38	93	86	2.105	0.862
Total Group	263	12	41	103	107	2.160	0.850
Item 16							
Administrators	34	2	3	14	15	2.235	0.855
Teachers	229	14	58	100	57	1.873	0.857
Total Group	263	16	61	114	72	1.920	0.863

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 17							
Administrators	34	0	3	6	25	2.647	0.646
Teachers	229	4	22	79	124	2.410	0.736
Total Group	263	4	25	85	149	2.441	0.728
Item 18							
Administrators	34	2	8	18	6	1.824	0.797
Teachers	229	36	109	70	14	1.271	0.798
Total Group	263	38	117	88	20	1.342	0.818
Item 19							
Administrators	34	1	17	14	2	1.500	0.663
Teachers	229	23	113	84	9	1.345	0.713
Total Group	263	24	130	98	11	1.365	0.707
Section B:							
Item 1							
Administrators	34	1	14	10	9	1.794	0.880
Teachers	229	33	93	72	31	1.441	0.899
Total Group	263	34	107	82	40	1.487	0.903

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 2							
Administrators	34	0	12	12	10	1.941	0.814
Teachers	229	15	71	93	50	1.777	0.863
Total Group	263	15	83	105	60	1.798	0.857
Item 3							
Administrators	34	0	4	15	15	2.324	0.684
Teachers	229	3	44	92	90	2.175	0.781
Total Group	263	3	48	107	105	2.194	0.769
Item 4							
Administrators	34	2	9	11	12	1.971	0.937
Teachers	229	11	44	84	90	2.105	0.877
Total Group	263	13	53	95	102	2.087	0.885
Item 5							
Administrators	34	0	11	13	10	1.971	0.797
Teachers	229	19	67	74	69	1.843	0.951
Total Group	263	19	78	87	79	1.859	0.932

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 6							
Administrators	34	4	10	13	7	1.676	0.945
Teachers	229	38	83	82	26	1.419	0.898
Total Group	263	42	93	95	33	1.452	0.906
Item 7							
Administrators	34	0	3	12	19	2.471	0.662
Teachers	229	14	30	86	99	2.179	0.883
Total Group	263	14	33	98	118	2.217	0.862
Item 8							
Administrators	34	3	4	12	15	2.147	0.958
Teachers	229	16	28	79	106	2.201	0.910
Total Group	263	19	32	91	121	2.194	0.914
Item 9							
Administrators		3	4	16	11	2.029	0.904
Teachers		25	38	99	67	1.908	0.944
Total Group		28	42	115	78	1.924	0.938

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 10							
Administrators		0	2	17	15	2.382	0.604
Teachers		16	42	94	77	2.013	0.896
Total Group		16	44	111	92	2.061	0.872
Item 11							
Administrators		2	2	15	15	2.265	0.828
Teachers		10	22	94	103	2.266	0.808
Total Group		12	24	109	118	2.266	0.809
Section C:							
Item 1							
Administrators	34	0	0	15	19	2.559	0.504
Teachers	229	7	21	96	105	2.306	0.763
Total Group	263	7	21	111	124	2.338	0.738
Item 2							
Administrators	34	0	3	10	21	2.529	0.662
Teachers	229	12	43	79	95	2.122	0.895
Total Group	263	12	46	89	116	2.175	0.879

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 3							
Administrators		0	1	15	18	2.500	0.564
Teachers		4	28	90	107	2.310	0.752
Total Group		4	29	105	125	2.335	0.732
Item 4							
Administrators		0	7	18	9	2.059	0.694
Teachers		16	87	95	31	1.616	0.806
Total Group		16	94	113	40	1.673	0.805
Item 5							
Administrators		1	1	18	14	2.324	0.684
Teachers		10	47	86	86	2.083	0.867
Total Group		11	48	104	100	2.114	0.848
Item 6							
Administrators	34	1	7	19	7	1.941	0.736
Teachers	229	31	79	93	26	1.498	0.867
Total Group	263	32	86	112	33	1.555	0.863

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 7							
Administrators	34	0	3	16	15	2.353	0.691
Teachers	229	8	26	112	83	2.179	0.766
Total Group	263	8	29	128	98	2.202	0.752
Item 8							
Administrators		1	1	17	15	2.353	0.691
Teachers		6	20	107	96	2.279	0.732
Total Group		7	21	124	111	2.289	0.726
Item 9							
Administrators		0	0	7	27	2.794	0.410
Teachers		1	10	61	157	2.633	0.589
Total Group		1	10	68	184	2.654	0.571
Item 10							
Administrators		0	3	17	14	2.324	0.638
Teachers		8	30	96	95	2.214	0.802
Total Group		8	33	113	109	2.228	0.782

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 11							
Administrators	34	1	3	13	17	2.353	0.774
Teachers	229	9	36	86	98	2.192	0.842
Total Group	263	10	39	99	115	2.213	0.834
Item 12							
Administrators	34	0	1	13	20	2.559	0.561
Teachers	229	5	11	92	121	2.437	0.689
Total Group	263	5	12	105	141	2.452	0.674
Item 13							
Administrators		2	4	20	8	2.000	0.778
Teachers		10	70	104	45	1.803	0.801
Total Group		12	74	124	53	1.829	0.799
Item 14							
Administrators		2	7	13	12	2.029	0.904
Teachers		5	48	119	57	1.996	0.740
Total Group		7	55	132	69	2.000	0.762

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 15							
Administrators		1	4	15	14	2.235	0.781
Teachers		10	39	89	91	2.140	0.852
Total Group		11	43	104	105	2.152	0.842
Item 16							
Administrators	34	1	1	13	19	2.471	0.706
Teachers	229	1	21	96	111	2.384	0.669
Total Group	263	2	22	109	130	2.395	0.674
Item 17							
Administrators	34	0	5	17	12	2.206	0.687
Teachers	229	7	54	109	59	1.961	0.785
Total Group	263	7	59	126	71	1.992	0.777
Item 18							
Administrators		2	9	13	10	1.912	0.900
Teachers		17	43	110	59	1.921	0.860
Total Group		19	52	123	69	1.920	0.863

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 19							
Administrators		0	0	4	30	2.882	0.327
Teachers		0	5	54	170	2.721	0.496
Total Group		0	5	58	200	2.741	0.480
Item 20							
Administrators		0	0	11	23	2.676	0.457
Teachers		1	21	102	105	2.358	0.664
Total Group		1	21	113	128	2.399	0.651
Item 21							
Administrators	34	0	2	11	21	2.559	0.613
Teachers	229	3	29	94	103	2.297	0.737
Total Group	263	3	31	105	124	2.331	0.726
Item 22							
Administrators	34	1	5	14	14	2.206	0.808
Teachers	229	13	43	94	79	2.044	0.872
Total Group	263	14	48	108	93	2.065	0.865

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 23							
Administrators		1	8	18	7	1.912	0.753
Teachers		15	61	112	41	1.782	0.814
Total Group		16	69	130	48	1.798	0.806
Item 24							
Administrators		1	6	18	9	2.029	0.758
Teachers		18	60	85	66	1.869	0.923
Total Group		19	66	103	75	1.890	0.903
Item 25							
Administrators		0	6	19	9	2.088	0.668
Teachers		22	62	90	55	1.777	0.922
Total Group		22	68	109	64	1.817	0.898
			PART II				
Item 1							
Administrators	34	2	16	12	4	1.529	0.788
Teachers	229	25	114	73	17	1.358	0.774
Total Group	263	27	130	85	21	1.380	0.777

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 2							
Administrators	34	1	6	18	9	2.029	0.758
Teachers	229	7	53	105	64	1.987	0.797
Total Group	263	8	59	123	73	1.992	0.791
Item 3							
Administrators		1	13	11	9	1.824	0.869
Teachers		7	37	105	80	2.127	0.787
Total Group		8	50	116	89	2.087	0.803
Item 4							
Administrators		0	15	17	2	1.618	0.604
Teachers		5	80	104	40	1.782	0.752
Total Group		5	95	121	42	1.760	0.736
Item 5							
Administrators		0	14	17	3	1.676	0.638
Teachers		7	80	100	42	1.773	0.779
Total Group		7	94	117	45	1.760	0.761

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 6							
Administrators	34	1	11	18	4	1.735	0.710
Teachers	229	3	89	94	43	1.773	0.761
Total Group	263	4	100	112	47	1.768	0.754
Item 7							
Administrators	34	3	20	8	3	1.324	0.768
Teachers	229	24	104	78	23	1.437	0.812
Total Group	263	27	124	86	26	1.422	0.806
Item 8							
Administrators		4	22	6	2	1.176	0.716
Teachers		42	129	50	8	1.105	0.730
Total Group		46	151	56	10	1.114	0.727
Item 9							
Administrators		3	21	8	2	1.265	0.710
Teachers		29	123	64	13	1.266	0.751
Total Group		32	144	72	15	1.266	0.745

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 10							
Administrators		1	9	16	8	1.912	0.793
Teachers		13	95	87	34	1.620	0.806
Total Group		14	104	103	42	1.658	0.808
Item 11							
Administrators	34	1	8	15	10	2.000	0.816
Teachers	229	11	57	111	50	1.873	0.804
Total Group	263	12	65	126	60	1.890	0.805
Item 12							
Administrators	34	3	16	12	3	1.441	0.786
Teachers	229	28	99	87	15	1.389	0.785
Total Group	263	31	115	99	18	1.395	0.784
Item 13							
Administrators		1	23	7	3	1.353	0.691
Teachers		31	136	50	12	1.188	0.728
Total Group		32	159	57	15	1.209	0.724

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 14							
Administrators		1	16	12	5	1.618	0.779
Teachers		15	86	92	36	1.651	0.822
Total Group		16	102	104	41	1.646	0.815
Item 15							
Administrators		2	14	13	5	1.618	0.817
Teachers		24	99	81	25	1.467	0.825
Total Group		26	113	94	30	1.487	0.824
Item 16							
Administrators	34	4	25	2	3	1.118	0.729
Teachers	229	47	121	45	16	1.131	0.817
Total Group	263	51	146	47	19	1.129	0.805
Item 17							
Administrators	34	1	20	9	4	1.471	0.748
Teachers	229	16	128	66	19	1.384	0.738
Total Group	263	17	148	75	23	1.395	0.738

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 18							
Administrators		5	16	12	1	1.265	0.751
Teachers		18	108	85	18	1.450	0.751
Total Group		23	124	97	19	1.426	0.752
Item 19							
Administrators		0	14	16	4	1.706	0.676
Teachers		15	95	97	22	1.550	0.757
Total Group		15	109	113	26	1.570	0.748
Item 20							
Administrators		0	4	22	8	2.118	0.591
Teachers		6	63	113	47	1.878	0.757
Total Group		6	67	135	55	1.909	0.741
Item 21							
Administrators	34	1	11	16	6	1.794	0.770
Teachers	229	14	90	99	26	1.598	0.770
Total Group	263	15	101	115	32	1.624	0.771

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 22							
Administrators	34	2	7	16	9	1.941	0.851
Teachers	229	20	99	89	21	1.485	0.781
Total Group	263	22	106	105	30	1.544	0.804
Item 23							
Administrators		0	9	19	6	1.912	0.668
Teachers		9	94	108	18	1.590	0.693
Total Group		9	103	127	24	1.631	0.697
Item 24							
Administrators		0	11	16	7	1.882	0.729
Teachers		7	74	115	33	1.760	0.731
Total Group		7	85	131	40	1.776	0.730
Item 25							
Administrators		1	13	14	6	1.735	0.790
Teachers		25	106	76	22	1.415	0.810
Total Group		26	119	90	28	1.456	0.813

TABLE 75--Continued

Groups	Number in Sample	Frequency Distribution 0	1	2	3	Mean	Standard Deviation
Item 26							
Administrators	34	1	9	21	3	1.765	0.654
Teachers	229	22	104	78	25	1.463	0.814
Total Group	263	23	113	99	28	1.502	0.800
Item 27							
Administrators	34	4	20	6	4	1.294	0.836
Teachers	229	47	118	46	18	1.153	0.837
Total Group	263	51	138	52	22	1.171	0.836
Item 28							
Administrators		2	22	6	4	1.353	0.774
Teachers		38	133	50	8	1.122	0.715
Total Group		40	155	56	12	1.152	0.726

APPENDIX D

TABLE 76

INTERCORRELATIONS AMONG ITEMS IN SECTION A*

Item No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1																			
2	28																		
3	28	26																	
4	05	17	40																
5	16	11	17	12															
6	06	07	06	15	55														
7	11	09	03	01	18	26													
8	14	04	09	06	23	20	32												
9	12	12	22	23	41	34	22	23											
10	07	03	11	16	37	36	22	29	55										
11	23	18	20	22	40	30	19	36	50	39									
12	23	29	19	05	11	09	37	23	15	18	25								
13	16	09	14	02	16	14	33	21	24	24	25	42							
14	22	22	13	03	11	11	43	24	11	12	22	56	52						
15	20	21	21	23	10	06	10	04	19	05	27	15	20	12					
16	14	09	32	31	29	28	09	14	19	18	40	09	04	10	31				
17	18	41	21	25	18	24	17	13	15	06	33	19	06	21	24	44			
18	14	04	16	26	38	40	26	32	44	51	40	22	26	21	21	43	28		
19	08	10	11	15	34	29	18	17	18	25	22	12	17	12	20	34	14	46	

*Decimals are omitted

TABLE 77

INTERCORRELATIONS AMONG ITEMS IN SECTION B*

Item No.	1	2	3	4	5	6	7	8	9	10	11
1											
2	75										
3	13	16									
4	23	22	40								
5	32	22	44	52							
6	37	26	26	35	46						
7	19	18	16	20	23	34					
8	28	19	40	53	43	37	34				
9	28	27	44	44	35	22	38	49			
10	24	23	27	27	37	20	34	32	49		
11	25	27	42	40	38	37	39	48	51		

*Decimals are omitted

TABLE 78

INTERCORRELATIONS AMONG ITEMS IN SECTION C*

Item No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1																									
2	23																								
3	43	52																							
4	30	37	43																						
5	21	37	35	40																					
6	24	33	29	38	45																				
7	30	36	46	34	50	49																			
8	25	35	41	31	38	36	75																		
9	17	19	16	08	13	17	27	26																	
10	24	34	41	34	31	33	48	48	20																
11	03	13	07	20	28	17	22	27	21	32															
12	14	20	16	25	36	28	33	32	31	38	57														
13	23	12	30	22	14	30	32	23	17	31	13	20													
14	18	19	20	12	20	17	21	26	29	26	08	15	46												
15	11	11	28	13	34	19	37	32	15	17	14	11	20	29											
16	15	05	21	06	11	12	13	20	24	09	03	06	10	23	35										
17	20	09	06	15	09	07	17	21	17	05	09	12	01	23	17	34									
18	11	04	13	05	05	06	18	23	17	17	04	12	22	24	20	35	25								
19	22	23	20	05	19	15	20	26	38	19	18	26	15	16	15	23	19	24							
20	14	20	16	20	21	20	27	26	24	25	12	26	19	15	13	20	29	29	39						
21	10	-07	-02	06	00	11	06	11	17	08	27	29	06	03	00	16	22	13	28	26					
22	14	18	24	12	06	16	13	12	15	20	13	20	24	13	-08	12	02	15	13	20	20				
23	15	04	13	19	17	21	12	03	07	10	06	12	22	06	05	06	11	03	07	23	21	30			
24	11	25	23	18	07	09	14	08	12	08	-03	03	14	06	16	08	08	14	02	17	-00	25	40		
25	13	18	28	32	14	26	12	04	05	08	04	12	30	13	09	09	11	07	03	21	08	30	34	40	

*Decimals are omitted

TABLE 79

INTERCORRELATIONS AMONG ITEMS IN PART II

Item No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1																												
2	40																											
3	25	31																										
4	35	29	22																									
5	35	33	21	50																								
6	31	28	23	31	69																							
7	29	28	24	37	36	30																						
8	36	26	22	29	28	24	00																					
9	26	26	17	28	32	27	56	59																				
10	28	29	12	36	35	33	35	33	36																			
11	32	41	12	43	46	35	35	31	32	59																		
12	30	23	25	22	24	23	36	36	34	41	46																	
13	26	11	25	20	25	15	31	30	29	24	19	33																
14	30	26	36	15	20	18	20	16	16	13	16	33	44															
15	30	35	26	24	28	21	29	26	28	30	27	24	38	40														
16	14	22	10	28	24	28	32	16	25	25	16	20	23	09	36													
17	24	32	18	30	35	30	27	31	33	38	29	23	26	19	41	50												
18	33	42	22	27	29	22	39	29	34	40	34	37	24	23	27	33	36											
19	25	38	20	37	38	33	33	32	29	42	44	23	27	16	30	35	52	44										
20	28	42	17	23	29	24	23	32	27	41	37	27	16	19	24	24	35	28	40									
21	28	36	34	35	35	35	39	39	34	41	35	37	35	26	31	26	37	36	44	47								
22	20	30	20	16	26	15	17	19	23	32	39	38	33	22	28	27	30	35	37	33	37							
23	27	37	20	32	42	37	31	35	32	34	42	30	24	28	31	27	42	37	52	51	52	41						
24	25	39	18	27	30	23	28	31	31	37	35	23	22	28	46	30	37	30	35	46	38	37	56					
25	11	20	15	14	18	14	30	30	25	35	29	30	28	27	20	23	31	28	37	41	49	42	49	48				
26	12	22	10	29	33	26	39	30	27	45	44	28	21	23	23	24	29	23	41	37	39	31	43	44	71			
27	26	25	15	27	33	27	22	18	23	26	28	26	43	37	19	19	21	27	28	26	34	42	37	30	40	36		
28	18	23	15	20	24	20	27	28	27	30	26	33	43	25	14	28	22	32	30	33	39	44	39	27	44	41	62	

* Decimals are omitted

APPENDIX E

Sample Letter to Principals

Dear _____:

The Independent Study Project directed by Dr. William M. Alexander and Dr. Vynce A. Hines is nearing completion. The survey has been quite successful, we feel, in identifying kinds of independent study, in describing promising practices, and in putting together a list of practicing innovators. I know you are interested in the progress of the project, having been directly involved, and that you are interested in the report's date of publication. Let me just mention that, because of increasing interest, the project was extended to become a nation-wide survey. Consequently our December, 1965 termination date was changed to May, 1966. We felt that the extension west of the Mississippi would lend greater significance to the study. The report is being readied and will be in the hands of the printer in June. It now appears that a copy will be mailed directly to you from the University of Florida.

In our analysis of the data thus far, two directions for further study seem urgent: (1) evaluation of independent study and, (2) preparation of independent-study teachers. Responses by the teachers, in our sample of thirty-six schools, indicate that we should make an effort to identify teacher-attitudes and feelings concerning pre- and in-service experiences. A follow-up opinionnaire, copies of which are enclosed, was designed to gather additional data required for (2) above.

Realizing that this is an extremely busy time of year for you and your staff, the opinionnaire has been constructed to require a minimum of teacher time and effort. Besides your own responses to the items of the opinionnaire, attached is a list of the names of teachers previously interviewed whose responses would be valued. Your continued cooperation would be very helpful and greatly appreciated in regard to distributing, collecting and returning the completed opinionnaire. A self-addressed, stamped envelope has been included for your convenience.

Thanks again for your participation and assistance in supplying the additional data.

Sincerely yours,

E. L. Bentley

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BIBLIOGRAPHY

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BIOGRAPHICAL SKETCH

Ernest Lynnwood Bentley, Jr.,was born in Ripley, Tennessee, April 11, 1938. He attended public elementary and secondary schools at Oak Ridge and Norris, Tennessee, graduating from Norris High School in 1955. He graduated from David Lipscomb College in 1959, receiving the degree of Bachelor of Arts with a major in history and minors in biology and English. In 1962, he received the Master of Arts degree from George Peabody College with a major in history.

Mr. Bentley was employed as a classroom teacher in Glynn County, Georgia from August, 1959 until June, 1961; in Nashville City schools, Nashville, Tennessee from January 1962 to June, 1962; and in Montgomery County, Maryland from August, 1962 until June, 1964.

In September, 1964 Mr. Bentley entered college at the University of Florida to pursue studies for the degree of Doctor of Education in curriculum and instruction. During this time he served as a graduate assistant, a graduate research assistant, and an intern coordinator in the Department of Secondary Education. He is a member of Phi Alpha Theta, Kappa Delta Pi, and Phi Delta Kappa.

Mr. Bentley married Betty Joyce Armstrong of Hartsville, Tennessee, September 13, 1958. The couple has two children, Ernest Lynnwood Bentley, III and Susanna Lynne Bentley.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of the committee. It was submitted to the Dean of the College of Education and to the Graduate Council and was approved as partial fulfillment of the requirements for the degree of Doctor of Education.

April, 1967

Dean, College of Education

Dean, Graduate School

Supervisory Committee:

Chairman